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ABSTRACT

This document by the Southeast Asian Ministers of Education Organization contains: (1) a summary report on the development of a regional center for tropical medicine; (2) a preliminary study relative to a proposed regional center for education in science and mathematics; (3) a preliminary study relative to a regional institute for English teaching; (4) a preliminary study relative to regional cooperation in educational radio and television; (5) a report of the SEAMES Task Force on Engineering; (6) a report of the Task Force on Tropical Medicine; (7) a report of the Task Force on Agriculture; and (8) a report on the Task Force on the permanent SEAMES office. (KE)

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SOUTHEAST ASIAN MINISTERS OF EDUCATION SECRETARIAT

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BANGKOK

NOVEMBER 1966

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SEAMES/041.02/F1

SUMMARY REPORT

ON

DEVELOPMENT OF A REGIONAL CENTER
FOR TROPICAL MEDICINE

Based on

An Original Study

prepared by

Dr. Alice Palmer
AID Medical Consultant

and

Dr. David Mckenzie
Communicable Diseases Center, Atlanta, Georgia

and

Dr. Charles Sprague
Dean of the College of Tropical Medicine, Tulane University

July 12, 1966

TROPICAL MEDICINE

INTRODUCTION:

We were invited to go as a team to Kuala Lumpur to investigate "the potential for establishing a center for tropical medicine, to be associated with the Faculty of Medicine at the University of Malaya and to serve the needs of Malaysia and other SEA countries." We are asked that our recommendations should note "comparative and complementary facilities in Bangkok" and that we should report in terms of regional requirements and interests. The team has kept in mind that consideration of such a project arose out of the conference of Southeast Asia Minister of Education held in Bangkok in November 1965.

Owing to varying personal commitments, the consultants were only able to meet as a team in Kuala Lumpur and later in Washington Dr. Sprague was able to make only a brief transit visit to Bangkok. Accordingly, the survey of comparative and complementary facilities in Bangkok was undertaken by Dr. Alice Palmer and Dr. David Mackenzie, both of whom spent a week in Bangkok, Dr. Palmer before the meeting in Kuala Lumpur and Dr. Mackenzie afterwards. However, both visited the same institutions in Bangkok and have made their own individual assessments which are in general and close agreement. Visits to Vietnam and the Philippines were made by Dr. Alice Palmer.

When this report and its recommendations are considered, it is important to realize that the team was investigating a potential and, in fact, making a feasibility survey. If the potential exists and the proposal is feasible then it is asked to make recommendations for proceeding further with the proposal. Accordingly, the team had first to develop its own concept of what a tropical medicine center should be in the context of the present situation in Malaysia, Thailand and in the region of SEA generally.

It has been put to the team that all medicine in the tropics is tropical medicine' and that it therefore follows that a tropical medicine center would be concerned with all diseases whether universal in distribution or exclusively confined to tropical regions. This attitude, however correct, is more academic than realistic in the context of our terms of reference. First, the Ministers of Education undoubtedly had in mind the communicable diseases of community importance which are endemic in the tropical SEA Region. Next, we believe that the tropical medicine center proposed should be concerned specifically with graduate teaching and research into endemic tropical disease problems at the doctorate level. Last and not least, we are convinced that there can be much attrition of limited resources of trained scientific staff and of facilities for research due to duplication. For example, coronary disease, diabetes and tuberculosis are universal diseases. Much fundamental and field research into these problems is going on in well staffed and equipped institutions in other parts of the world where patients suffering from these diseases are also readily available in adequate numbers; the content and results of such programs can be expected to be readily available. While it may be desirable for the academic research function in a University sited in the tropics to include attention to such problems, this inevitably leads to dissipation of local resources of trained staff and funds that could be more properly applied to endemic tropical communicable diseases. It is these diseases which have a much greater impact on community health in the rural areas where the greatest part of the population lives.

Accordingly, the team has concluded that the aim should be to establish a tropical medicine center which is initially and primarily concerned with teaching and research applicable to the recognition, effective treatment and community control of the communicable tropical disease problems endemic in the SEA Region. To establish such a center in the Region at this particular time it is essential to consider from the start the provision of highly qualified scientific staff recruited from both inside and outside the SEA Region and an affiliation with University School of Tropical Medicine of already established academic distinction. For this purpose, medical research ward, health center and field survey facilities are required either centered in or convenient to an area where diseases of regional importance are prevalent

BACKGROUND -- Visits and Observations

KUALA LUMPUR

Generally speaking, there was enthusiasm for the proposal to establish a tropical medicine center in Kuala Lumpur.

At the Institute for Medical Research (IMR) the team was well received and given a detailed outline of the program of work being developed. The IMR, established in 1960, has a long respected tradition of research into endemic disease problems in Malaysia and neighborin countries.

Since just after World War II a U.S. Army Medical Research Unit has been working in the IMR. It has been joined by an ICMRT group from the Hooper Foundation. These two groups have been concerned with tropical medicine research and, in the past few years, have been carrying on many of the research activities as have continued at the IMR. Apart from these research activities the Institute has become a center of laboratory activities serving Malaya as a whole.

Recently Dr. Omar has returned, after four years post graduate study in Britain, to assume the Directorship of the IMR. He aims to develop the IMR as a National Public Health Laboratory concerned with reference functions, vaccine production and epidemiological intelligence and epidemic aid activities. It is also to be the central training institute for laboratory technologists and assistants.

The Medical Faculty at the University is newly established and the buildings are being completed to a schedule which moves one or two years ahead of the undergraduate curriculum which is still not beyond the pre-clinical level. The Faculty buildings have just been completed and are commodious, of modern design and realistically equipped. The teaching hospital adjacent to the Faculty is still under construction but is expected to be completed this year. It seems probable that it will be some time before it is ready to function as a hospital. Meantime, clinical instruction facilities will be available in rural township hospitals near Kuala Lumpur.

There are admirable facilities available in that section of the new Faculty buildings which is set aside for post graduate teaching. This existing accomodation could be used at least as temporary accomodations for the activities of a tropical medicine center until such time as a building program could be completed. Further, there is a part of the Faculty grounds set aside for the building of an Institute of Post Graduate Studies at a later date.

The team has concluded that there is the potential to develop a tropical medicine center in Kuala Lumpur, that the physical facilities are already there which could be made available and that there are ample clinical research facilities readily accessible. It believes that establishment of the center at Kuala Lumpur should be an autonomous unit having a highly qualified international scientific staff operating in association both with the Faculty of Medicine and the IMR. Under such circumstances no real difficulty is foreseen. It also seems certain that, once the center is established, the patient care and training components of its activities could be arranged in the new Teaching Hospital.

Provided that the Medical Faculty association could be arranged on a basis which would ensure harmonious and co-operative working, the contribution to be made by a tropical medicine center could be of regional significance and at the same time benefit Malaysia in the fields of post graduate scientific teaching and tropical medicine research.

BANGKOK

Relative to the establishment of a Tropical Medicine Institute in Kuala Lumpur, a comparison should be made with existing and comparable institutions located in Bangkok.

Aside from the medical school at Chiengmai in North Thailand, four medical schools exist in Bangkok. The Rockefeller Foundation is currently developing a fifth school to place major emphasis on the production of manpower in the biological sciences. Ten percent of the graduates of this medical school are expected to develop careers in the biological sciences while the others will become physicians well grounded in science. This medical school project is probably related more to eventual high academic standards than to present or immediately future health needs of Thailand.

The "Faculty of Public Health" in Bangkok, with Doctor Charas Yamarat as dean, is engaged primarily in the production of public health personnel at all levels. Most of the students are people assigned for further development from the Ministry of Health. This school also has a research component with studies almost entirely limited at present to virus diseases and tissue culture. Connected with this school is an excellent laboratory built by the Rockefeller Foundation and equipped and partially sustained by the Bangkok SEATO Laboratory.

The work of the virus laboratory complements that of the independent "Faculty of Tropical Medicine", which is a purely indigenous development. It was created, developed, supported and maintained by Thai persons and Thai government. This school is one of the key institutions in the region. The Dean is Doctor Chamlong Harinasuta, who, as well as many members of his staff, was educated in tropical disease at Liverpool. The Chief Advisor is Doctor Brian Maegraith, Dean of the Liverpool school. The Bangkok Faculty of Tropical Medicine includes a 100-bed clinical research hospital. The staff of the school numbers 186 persons, 31 of whom are M.D.s, 7 are Ph.d.s, 19 are certified technologists, 33 are trained technicians, 33 are nurses or aides and 48 are janitors, or handymen. Twelve graduates of the school are currently studying abroad to obtain Ph.D. degrees. Three of these, all on Thai government scholarships, in the field of pathology, amoebiasis research, and entomology, are studying in the United States. Others, in radioisotope work, schistosomiasis, physiology of snails, biochemistry and other specialized areas, are studying in Canada, Australia, and Liverpool, England. Support for the school, aside from the Royal Thai Government, comes from the Colombo Plan, the International Atomic Energy Commission and, in small amounts, from the National Institute of Health and the Walter Reed Army Institute of Research. Several field substations are maintained and utilized. Worthwhile studies are going forward in helminthology, amoebiasis, hookworm disease, filariasis, liver fluke, radioisotope tracing of amoebic pathways, and others. With a view to a regional function, the Faculty of Tropical Medicine in Bangkok will have enough personnel by 1970 who can maintain courses in English. Dr. Chamlong would then be able and willing to accept both regional and international students for post graduate education and for research projects. In the meantime, a start toward regional influence has been made by convening international symposia on regional endemic disease problems. A recent such conference was the successful "Second Regional Conference on Parasitic Diseases", held at the school in March 1966. Further, Doctor Maegraith would be willing to cooperate fully, both as Dean of the Liverpool School of Tropical Medicine and as an advisor, consultant, or committee member.

Another major center of biomedical research in Bangkok is the SEATO Laboratory. This laboratory has now some extensive facilities, with more under construction. It conducts a wide spectrum of investigational projects. The project is necessarily related to health problems confronting the armed forces of the SEATO nations. Such problems are, however, endemic to Thailand and the Thai people benefit directly.

The associated clinical research center now being build for SEATO is about the same size as that already established in the Faculty of Tropical Medicine. In time the Rockefeller Project will have similar facilities.

SAIGON

To relate potentials in Kuala Lumpur and Bangkok, a review of the tropical medicine institutions in Saigon is briefly included.

The Faculty of Medicine is currently in the process of expansion of its facilities and staff. A new basic sciences complex is now fisnished and almost fully equipped. It is expected that students will begin work there in September 1966. However, until now in Saigon, medicine is taught in French. With the introduction of American faculty help this Fall, the school is to be divided into French and English sections, depending on the desires of the students. The secondary schools in Saigon are now producing about 50% of the graduates who can take professional courses in English, the other 50% still speaking French as their second language. It is expected that the school will convert fully to English in the next three to five years if the present trend continues.

Research in the medical school is taking place, but is minimal. It is contemplated that research will make a great advance with the September 1966 advent of American scientists.

Also in Saigon there is at present a flourishing institute for tropical medicine research. This is the Pasteur Institute of Saigon This institution was established and owned by the French. The government of Vietnam took possession of the buildings and grounds and attempted to change the name to "The National Laboratory of Vietnam". The Vietnamese scientists on the staff succeeded in having the name "Pasteur" retained, since this institute was the first offshoot of the original Pasteur Institute in Paris.

The director, Dr. Ai, was educated in France and has combined his efforts with a member of his staff, Dr. Do Van Quy, an entomologist trained in the United States. The buildings are extensive, the scientific library the best in Vietnam, the laboratories well equipped and well staffed. Four M.D. - ph.D. men head essential departments. All of these were educated in the United States. The research being done is extensive and of high quality. The Walter Reed Army Institute of Research has supplied elaborate equipment and many capable scientists. A new 3-story laboratory has just been completed and is already a bristling laboratory devoted to the study of plague. A new 12-story building is being started. Elaborate studies are being conducted related to mosquitoes and malaria. A leprosy clinic flourishes. More than half of the scientific staff (the American trained ones, and Dr. Ai) have teaching appointments at the medical faculty.

Another facility is the Military Medical School. The advisers to this school are United States Army personnel. The students take their undergraduate work at the Faculty of Medicine with military, medical and surgical courses added at the military medical school in the evenings. The U.S. Army is currently planning to help the military school in a program of marked expansion. Research, as far as could be ascertained, is not being done at this institution.

Vietnam, of all the four countries visited, presents the greatest supply of patients suffering from endemic transmissible disease. As an example, during the week in Saigon, there were 48 cases of plague reported and certified in Saigon alone. There was a large ward filled with cholera patients. Similar statements could be made of other such diseases.

MANILA

Without entering into details, suffice it to say that of the medical institutions existing today in the Philippines, the one with the largest and most skilled faculty is that of the University of the Philippines.

Important developments are taking place in the broad field of education in the island of Mindanao. The possibility of medical research, while a number of years away, should be strongly borne in mind as part of the necessary vision for this part of the country.

CONCLUSIONS AND RECOMMENDATIONS

There is the potential to establish a Tropical Medicine Center (TMC) in Kuala Lumpur which could be associated with the Faculty of Medicine at the University of Malaya. It was clearly indicated by the Dean of the

Faculty that a working relationship could be arranged with the New Teaching Hospital to handle the patient care and the training components of the TMC once it had been established.

Further, the initial permanent staff of the TMC should consist of well trained scientists from schools of tropical medicine of high scientific standing. The functions of the center should be to undertake post graduate teaching and research at the doctorate level for selected graduate students from both inside and outside the SEA Region.

To ensure that the needs of the Region in the relevant fields are served by the TMC, a Scientific Advisory Council should be constituted consisting of established medical scientists nominated by the governments or other agencies supporting the Center. The Function of this Council should be to review programs of graduate teaching and research carried out by the TMC in the light of regional needs and to advise the chief of the TMC accordingly. This Council should report annually on the working of the TMC to the administrative body responsible for financing the Center and should make appropriate recommendations regarding the budget for the year following that of the annual report. Further, the Council should encourage the exchange of scientists and graduate students between the other established tropical medicine centers in the Region at Bangkok and Saigon respectively. This might be best achieved by the location of a special Fellowship allocation within the budget for the financing of such exchanges which would be made in consultation with the chiefs of the centers concerned.

In reaching these conclusions the team has given full consideration to the already developed facilities at the Pasteur Institute and the Faculty of Medicine in Saigon and at the Faculty of Tropical Medicine in Bangkok.

The Team considered the matter of location for the proposed Tropical Medicine Institute and concluded that Kuala Lumpur would provide a particularly suitable site. It recommends that the proposal to establish a regional TMC at Kuala Lumpur should now be explored with the appropriate Ministers of Education and Health in the SEA Region.

When agreement on this has been reached, a task force of three or four persons should be appointed to develop the detail. It is considered that the functions of this task force should be:

(a) to enlist the interest and determine the possible areas of participation of universities either in the Region or presently closely associated with the Region. In the latter category, Australia, New Zealand, the U.S. and Britain are specifically related to the Region through the Colombo Plan or SEATO. There are universities in some of these countries with already long established schools of tropical medicine, which have had or have existing direct links with Universities in the Region.

(b) to propose an organizational structure for the TMC and to charge the number of permanent staff positions necessary to its function.

(c) to draw up a schedule of office and laboratory accommodation and of equipment for the Center.

(d) to explore the facilities for clinical research ward accommodation and patient care.

(c) to define the constitution proposed for a Scientific Advisory Council.

(f) to outline a fellowship program which will finance selected graduate students working at the Center.

(g) to prepare a budget to cover the capital cost of establishing the Center and the recurrent costs annually for the first five years of operation.

The team has been unable to see any merit in a global "guesstimate" of the cost of a regional TMC. If the proposal is accepted and is to get off to a quick and smooth start then careful and reasonably detailed estimating of costs is warranted. This is best done by the task force proposed.

Accordingly, it is recommended that financial provision be made for a task force of four persons working for a period of three months and travelling extensively in the SEA Region. Its composition should consist of two consultants in tropical medicine experienced in the organization of a School of Tropical Medicine and of its teaching and research functions. It is desirable to have, if possible, a medical consultant from the Region knowledgeable of the regional situation and its disease problems. Finally, as a fourth member, an administrative assistant would be an important and essential member of the team to be responsible for the records, the mechanics of budgeting and the executive work inherent in an assignment of this nature.

SEAMES/041.02/F3

REPORT

to

THE SOUTHEAST ASIAN MINISTERS OF EDUCATION SECRETARIAT

A PRELIMINARY STUDY RELATIVE TO A PROPOSED REGIONAL CENTER FOR EDUCATION IN SCIENCE AND MATHEMATICS FOR SOUTHEAST ASIA

Prepared By

Dr. William Eilers
Asia Foundation Representative
Kuala Lampur, Malaysia

Dr. Howard F. Foncannon
National Science Foundation
Washington, D.C.

and

Clifford C. Little
Physics Coordinator
Summer Science Institute Program
USAID/ED, New Delhi, India

June 7, 1966

Bangkok, Thailand

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REPORT OF THE TECHNICAL SURVEY TEAM ON THE PROPOSED REGIONAL CENTER FOR EDUCATION IN SCIENCE AND MATHEMATICS

Following is the report of the Technical Survey Team which visited Thailand, the Philippines, Singapore, and Malaysia between May 17-30, 1966, to examine the feasibility of establishing a REGIONAL CENTER FOR EDUCATION IN SCIENCE AND MATHEMATICS for Southeast Asia. The Survey was made under the auspices of the Southeast Asian Ministers of Education Secretariat (SEAMES).

I. INTRODUCTION:

At the meeting of the Southeast Asian Ministers of Education with Mr. Eugene R. Black, Special Advisor to the President of the United States, at the Thai Ministry of Education on November 30th, 1965, it was agreed that steps should be taken to establish some form of regional cooperation in education. Suggestions were made which have served as a basis for the formulation of various project proposals.

A Southeast Asian Ministers of Education Secretariat (SEAMES) was set up at the Educational Planning Office of the Thai Ministry of Education under the directorship of Dr. Kaw Swasdi Panich. Subsequent to the establishment of the Secretariat, a preliminary mission headed by Dr. Kaw Swasdi Panich and including Dr. C. Earle Hoshall, U.S. Representative attached to SEAMES, visited the Philippines, Vietnam, Singapore, Malaysia and Laos for the purpose of further developing the proposals made at the Black meeting.

One of the proposals which was considered to be worthy of further study and development was the establishment of a REGIONAL INSTITUTE OF SCIENCE TEACHING AND MATERIALS. (The survey Team recommends that the name of the project be broadened to REGIONAL CENTER FOR EDUCATION IN SCIENCE AND MATHEMATICS).

In the preliminary proposal prepared by the SEAMES Secretariat the tentative objectives were stated as follows:

A. Develop better methodologies for the teaching of Science.

B. Develop or improve the curricular materials with sharper focus on indigenous phenomena and customs.

C. Develop science teaching equipment that can be produced locally at relatively low cost.

D. Arrange the holding of science teaching seminars during out-of-school months for teachers and supervisors.

E. Eventually through this program to provide for the improvements of college science instruction by turning out better prepared secondary school students.

The preliminary proposal recommended that initial efforts should be concentrated at the secondary-school level, but that provision should be made for extension to the elementary or primary school level.

It was suggested that the Institute might be located at Penang, Malaysia. Recommendations also were made on organization including Administrative Staff, Advisory Council and Program including scholarships and seminars, and on the possible need for physical facilities.

II. THE TECHNICAL SURVEY TEAM

A survey team of three individuals with experience in various phases of science education was organized by SEAMES with the assistance of Dr. C. Earle Hoshall to explore this recommendation further and to examine the needs for facilities, organization and program of the proposed center.

The team consisted of the following:

William Eilers, Asia Foundation Representative, Kuala Lampur, Malaysia; Former Director of the Foundation's Asian Science Development Program.

Howard F. Foncannon, Coordinator, International Science Activities, National Science Foundation, Washington, D.C.

Clifford Little, Physics Coordinator, Summer Science Institute Program, USAID/Ed, New Delhi, India.

During the period May 17-30th, 1966 the team visited Bangkok, Manila, Singapore, Kuala Lumpur and Penang. In each country, careful preparations had been made for conversations with Ministers of Education and Heads of other relevant governmental agencies, professional persons in the Ministeries of Education who were concerned with education in science and mathematics, teachers in the schools who were involved in projects for the improvement of teaching in science and mathematics, professors in the universities and lecturers in teacher-training institutions who were interested and involved in these activities, and USAID, USIS and US Embassy officials. Visits were made to numerous secondary schools and to teacher-training colleges, universities and laboratories. A partial list of those interviewed is included at the end of this report.

In every instance, members of the team were received with cordiality by persons with an obvious desire to be of every possible assistance. The purpose of the mission was in nearly all cases well known and understood. At the end of the trip, the members of the team felt that, although the time had been very short, preparations had been made so well that a good understanding of the problems and of the many suggestions for their solution had been attained.

III. BRIEF SUMMARY OF FINDINGS AND RECOMMENDATIONS

The Technical Survey Team visited Bangkok, Manila, Singapore, Kuala Lampur and Penang. A study was made by obtaining opinions from a wide variety of sources on the feasability of establishing a Regional Center of Education in Science and Mathematics for Southeast Asia which had been proposed by SEAMES. This proposal had resulted from a series of meetings and studies following the establishment of SEAMES.

The survey team was entrusted with the task of examining the feasibility of establishing a regional center which would primarily be involved in the development of methodologies, teaching materials and equipment, and the training of teachers in science and mathematics primarily at the secondary-school level.

The team found a high degree of interest and a considerable amount of activity in the reform of education in science and mathematics in each of the countries visited. For the most part, this interest and activity is based on modern concepts of science education recently developed in the United States and the United Kingdom.

In general, there was a high degree of receptivity to the idea of a regional center provided that it did not duplicate or reduce the effectiveness of on-going and planned national efforts. Many recommendations of program activities which met the basic criteria were received by the team. These recommendations are summarized within the following categories;

A. The training of additional leaders in the content and methodology of modern education in science and mathematics through: seminars; special courses for staff and faculty; training courses for leader teachers in course content preparation; and special training outside the region.

B. The development of modern instructional materials through study teams working on course syllabi and content which are appropriate for the region, and for the individual countries.

C. Regional Services, including:

1. A repository of modern science and mathematics teaching materials.
2. Availability of expert consultants.
3. Regional newsletters.
4. Establishment of a Biological Materials Preparation Center.
5. Research in standards and examinations.
6. The development of inexpensive teaching aids and laboratory apparatus.
7. Coordination with National Science Teaching Centers.
8. Miscellaneous proposals including: (a) regional meetings of science faculties; (b) specialized seminars; (c) training of supporting personnel; and (d) student motivation through Traveling Science Libraries and Traveling Science Demonstrations.

The survey team concurs in the initial recommendation that a suitable location for the center would be at Penang. The Chief Minister, Penang State, has allotted a total of 40 acres for the Center which would be continguous to the existing National Teachers College on Penang Island. The site is sufficient to accomodate buildings needed for the Center itself, as well as for housing for staff, faculty and participants.

It is proposed that the Center be guided by a Steering Committee of at least two representatives from each participating country and be administered by a Director and a Deputy Director. Program activities would be the responsibility of program directors selected for each major function. The steering Committee should be drawn from academically qualified scientific and educational personnel of the region with suitable experience in science education, teacher education and the new curriculum approaches in the sciences and mathematics. At least one member from each country should be at the doctoral or equivalent level selected from the science or mathematic departments of universities.

The organization and administration of the Center should be independent of any national institution, the Steering Committee and the Director being responsible to the SEAMES Secretariat or Governing Body. Similarly, annual program and administrative funds for the Center should be allocated through such means that would assure the Center's continued **autonomy** Program development funds should be budgeted each year in order to assure Center support for new and imaginative undertakings on a regional basis in education in the sciences and mathematics.

Program planning for the Center should seek an optimum integration and coordination with existing and projected regional activities in science education supported by other organizations. This would include the UNESCO Regional Science Cooperation Office in Bangkok, the East-West Center in Hawaii, the Association of Southeast Asian Institutions of Higher Learning (ASAIHL) in Bangkok, the Association of Southeast Asia (ASA), and other American and United Kingdom foundations active in the region. A special effort should be made to correlate the Center's activities wherever possible with other regional institutes under the SEAMES program. It is recommended that the National Science Foundation in Washington D.C. be requested by SEAMES to provide coordination and technical assistance support of United States participation in the Center's programs. Full cooperation with the on-going and planned science teaching centers in Thailand, the Philippines, Singapore and Malaysia is recommended.

Prior to the establishment of the Center agreement should be reached between the participating Southeast Asian nations and the United States as to the disposition of the Center's physical assets, should the SEAMES nations elect not to continue financial support of the Center, and should the United States fiscal support be phased out. In this connection analysis of the status agreement governing the International Rice Research Institute at Los Banos is suggested as a model.

IV. SCIENCE AND MATHEMATICS EDUCATION IN SOUTHEAST ASIA

It is believed that a detailed listing of all the on-going projects of various kinds for the improvement of science and mathematics teaching in the countries visited would not be appropriate in this necessarily brief report. The following, therefore, is a summary of the findings of the team which is believed to be adequate for the immediate purpose.

A. In each of the four countries visited there was strong evidence that the Ministry of Education fully recognizes the importance of the rapid improvement of education in science and mathematics - - a fundamental factor in future economic, cultural and social development. The Ministries are ready to foster and support, to the extent practicable, projects and activities directed toward the accomplishment of this goal.

B. In each of the countries visited there is a small but effective and competent cadre of teachers and professors already engaged in projects for the improvement of science and mathematics education. In each country some of the Ministry officials, teachers and professors have received training in new techniques and approaches to science education in the United States or the United Kingdom.

C. In each country, however, actual progress in the improvement of education in science and mathematics is proceeding too slowly to accomplish the desired objectives within a reasonable time.

It was frequently stated that the principal obstacles to more rapid progress are:

1. the limited number of trained persons to work on the projects;
2. the need for a larger number of expert consultants from outside the region with broad experience in science education reforms, and
3. shortage of funds for the preparation of new teaching materials, facilities and training, even though it was generally agreed that each Government is doing its best to provide adequate support.

D. The new science and mathematics teaching materials which recently have been developed in the United States, the United Kingdom, Australia and elsewhere have been examined critically and wisely in each country. It is well understood that courses developed for use in other parts of the world cannot be adopted in toto in any one of the countries of the region, but that each country must develop its own materials to fit its own needs. Much can be gained, however, by drawing freely from these new materials and ideas from the outside and adapting them for local use, and by working together in a broad range of cooperative regional enterprises.

E. Despite some expressions of reservation about the flexibility and sustained effectiveness of a Regional Center, there was unanimous agreement among those actually engaged in national efforts to improve science and mathematics education that a Regional Center properly conceived and administered and conducting a carefully designed program could be a powerful instrument both in improving the quality and in hastening the progress of national efforts. The national groups are now working in relative isolation. The problems are so large and cover such a wide range that no existing group is likely to be able to solve them all within the foreseeable future. An encouraging and heartening aspect of the survey was the eager expressions of willingness on the part of all who are engaged in the various phases of improvement of the teaching of science and mathematics to share their experiences and the results of their work with their colleagues in the other countries of the region in common enterprise with the assurance that their general objectives thus would be advanced.

V. PROBLEMS WHICH CAN BE ATTACKED ON A REGIONAL BASIS

While there is complete understanding that each country must prepare its own syllabi and courses to meet its own needs, there are numerous problems which can be attacked on a regional basis in ways which will be profitable to all. The principles of science and mathematics are universal; there is general agreement that the application of certain modern approaches to science and mathematics teaching are also universal in the general effort to achieve excellence through participation and understanding by the student, whether he be in the primary school, the secondary school, the teacher-training college or the university.

It was the consensus of those interviewed that the following kinds of activities can be carried out on a regional basis to a greater advantage than if conducted exclusively on a national basis.

A. The training of additional teacher-leaders in the content and methodology of modern education in science and mathematics.

B. Training and research in the development of model topics e.g., blocks of course materials in science and mathematics which would be common to courses (with necessary adaptations) developed in each country. Included in this category would be the development of supplementary teaching aids, e.g., inexpensive demonstration and laboratory apparatus from indigenous materials; audio-visual materials; innovations adapted from other countries, etc.

C. Services of many kinds to Ministries of Education, universities, teacher-training institutions, national science education centers and individual science and mathematics teachers which can be provided better and more economically by a regional agency than by the individual countries.

Individual projects which were recommended and which could be administered by the Regional Center within each of the categories listed above are described in the following section.

VI. SUGGESTED PROGRAMS FOR THE REGIONAL CENTER

The following proposals all have been suggested to the survey team as being practical and useful in promoting the improvement of science and mathematics education within the region without interfering with or imposing undue outside influences on the development of Science education reforms in the individual countries. It goes without saying that not all of these proposals could be mounted at the same time. This would be impractical both by lack of adequate funds under the most favorable circumstances, but, more importantly, by the lack of qualified personnel to staff them without an undue strain on the already limited personnel resources of the region --- let alone the availability of the number of visiting specialists and consultants who would be needed.

The principal purpose in describing these programs in some detail is to demonstrate the apparent need for a regional center, and to show that there is a wealth of opportunity for a staff with imagination, resourcefulness and determination to mount a program which, without question, would stimulate and materially help to implement national programs to inject the essential elements of speed and quality into their efforts to keep pace with the rapidly advancing world of technology.

A. TRAINING IN THE CONTENT AND METHODOLOGY OF MODERN EDUCATION IN SCIENCE AND MATHEMATICS

Throughout the Southeast Asian region there is an acute shortage of trained teachers of science and mathematics. A substantial percentage of the lower and upper secondary teachers have had few coursed in mathematics and science above the level at which they are teaching.

Few have had a significant introduction to new concepts and new approaches. Professor C.J. Eliezer, Professor of Mathematics at the University of Malaya, has stated that: "Southeast Asia has been entirely by-passed by the wave of new thinking in mathematics concepts which, over the past ten years in the West, has revolutionized mathematics and teaching methods that the 'new' mathematics necessitate....." While the situation at the present moment may not be quite as dismal as Professor Eliezer has described, the fact remains that relatively modest changes have actually penetrated to the teaching level in most of the schools.

To the formidable problem of providing re-training for the present corps of science and mathematics teachers is added the task of providing modern training both in the content and in methods to the increasingly large numbers of new teachers required to meet the burgeoning school populations.

There has been no disagreement with the concept that, primarily, the task of teacher training (both in-service and initial) is one which must be carried out by the individual countries. There are, however, important functions which can be performed in a regional center which will facilitate the work in the individual countries.

The following programs have been suggested as possible avenues of approach to the problem.

1. Seminars

In order to introduce radical changes in teaching methods and content within the existing syllabi - and as the essential basis for the development of viable teacher-training courses - persons closely connected with the development of modern course-content materials, educational planning, and the administration of programs of teacher training should be provided with the opportunity to participate in short, intensive introductions to the philosophy, methods and materials which have been developed in numerous places in the world during the past ten years. These seminars could be of a week or 10 days duration, staffed by highly qualified experts from the region and consultants from the places where new developments have had their origins. Participants should include representatives from the Ministries of Education, educational planning commissions, teacher training institutions, and supervisors of science and mathematics instruction. The seminars would not attempt to "sell" any particular courses or approaches, but would attempt to demonstrate clearly the basic reorientation in thinking which has taken place and to provide a general understanding of the characteristics of the various new courses which have been produced.

2. Special Courses for Staff and Faculty

Within the region there is a considerable number of well-qualified staff in the teacher-training institutions and in the universities where teachers are trained who would benefit from an eight or ten week refresher course in the basic subject-matter of their disciplines. Not only would they be introduced to new developments in their fields of science and mathmetics, but they would be provided with information on new approaches to the teaching of their subjects, with particular reference to the special problems involved in teacher training. These teachers upon return to their institutions can serve as focal points for further dissemination of new knowledge and methods.

3. Training Courses for Leader-Teachers

While massive programs of science and mathematics teacher re-training must be left to the individual countries, there must be a corps of leader-teachers trained to a level of competence in new content and new methods to provide a high quality of instruction in local in-service teacher training programs. Much can be done to prepare these leader-teachers at the regional level. Intensive programs of instruction at the regional center, or at other appropriate places, for periods of from six months to a full academic year would do much to fill this need. Regional instructional staff could be augmented by visiting staff and faculty members who would help to reduce the burden which such programs would place on university faculties in the region.

4. Special Training outside of the Region

Not all training can be done within the region. Selected teachers, supervisors and other leaders should be provided opportunities to work and study abroad, to participate, first-hand, in programs of science education reform in Europe, the United Kingdom and the United States. A part of this task can be accomplished through expansion of such existing programs as those of the National Science Foundation Washington D.C.,/Asia Foundation and Fulbright Commissions. At the same time, there should be provision in the program of the regional center for the awarding of special travel grants and fellowships for work and study abroad by individuals who have particular needs in connection with their work at home.

A variation of this technique, and one which has proved successful elsewhere, is for a team of specialists (inspectors of science education, for example), one from each of several countries in the region, to travel together for study and work in a program especially prepared to meet their needs.

B. THE DEVELOPMENT OF MODERN INSTRUCTIONAL MATERIALS

Some work is being done in each of the countries visited to bring the materials of science and mathematics instruction up to date. These projects range from a full fledged translation-adaptation of one version of the new U.S. biology materials to relatively limited efforts to produce individual teaching units. It has been found, both in the United States and in the United Kingdom, that the production of new text-books with the required teachers guides and laboratory manuals is an extremely complicated process. It requires the work of many minds — scientists and mathematicians working in cooperation with experienced supervisors, teachers, and technicians through a time and work-consuming cycle of initial preparation, trial, and revision to produce materials of high quality suitable for the needs of the students and of the educational system in general. Each country that was visited has plans for the production of new science and mathematics courses to meet its needs. Some countries have progressed farther than others, but all still have a long way to go before the desired objectives can be reached, as is true of every country, including the United States.

There were repeated indications that experimentation in techniques would be a greatly beneficial function for a Regional Science Center of value to each country in the region. The prototype UNESCO chemistry project in Thailand is being studied with great interest. One result has been the recommendation that semi-permanent workshops be established at the Regional Center where consultants from the United States, the United Kingdom and elsewhere can work with small teams of participants from countries in the region to develop a series of prototype course syllabi and units of content materials which are appropriate for use within the region. The planning of a model course in a particular discipline could be discussed and appropriate sections or "units of work" could be developed at the center. Such units could be useful in at least three ways:

1. To give practical experience to those who participate and who will be involved in the large-scale process of producing new courses in their respective countries.

2. To be available to teachers in the region for the enrichment of their programs of instruction within the limits of the syllabus.

3. To serve as basic elements (with suitable modification) in new courses which are being prepared on a country basis.

Each team should be made up of:

1. A team leader from one of the countries of the region (preferably an experienced scientist or mathematician).
2. A consultant from the United States or the United Kingdom.
3. Two or three classroom leader-teachers from each participating country.

Provision should be made for trials in suitable schools under the direction of teachers who have had some contact with the project.

C. REGIONAL SERVICES

Despite the many efforts that are being undertaken to improve science and mathematics education in the individual countries, there are serious limitations on their progress and quality. This is largely due to lack of communications and lack of access to materials and ideas which are being developed elsewhere both within and outside the region. A wide variety of services are needed. While it is possible for each country to develop a mechanism for obtaining these services, much can be saved in time and money through a regional system. The following is a brief outline of such services, all of which were proposed to the Technical Survey Team not only as being needed but as being better administered through a regional center than by each individual country.

1. Repository of Modern Science and Mathematics Teaching Materials.

The large number of projects for the development of modern science and mathematics teaching materials from the elementary-school through the university, which are being supported by such national agencies as the National Science Foundation of the United States and the Nuffield Foundation of the United Kingdom and by such international organizations as UNESCO and OECD, are producing a volume of materials which cannot be collected except by a deliberate and sustained effort by a special agency charged with this responsibility. It has been proposed that an extensive repository of such materials be established in the Regional Center. The materials would include text-books, laboratory manuals, teachers' guides, films, models of demonstration and laboratory equipment, monographs, pamphlets, newsletters, articles in journals, science education journals, and many others. These materials would be collected in multiple sets, one set of each to remain permanently in the center for inspection by individuals from national working groups and for use in seminars, workshops and other local activities. The duplicate sets would be available for loan to working groups for use in local teacher training courses and the development of course-content materials for the participating countries of the region.

An important part of this project would be the development of a library of new text and reference books of a general nature in science and mathematics.

In general, these would be the kinds of books that would be acquired by libraries in schools, teacher-training institutions, and university departmental and general libraries for general reference purpose. These books would be purchased in multiple copies and would be available for circulation within the region for inspection and review as a service designed to enhance the selection of new acquisitions. The staff of the Institute would circulate lists of new acquisitions, and the books would be circulated in response to specific requests.

2. Expert Consultants. Frequent need was expressed for the services of expert consultants, on a short-term basis, for assistance on particular problems in course development programs, to serve as visiting lecturers in national and local teacher-training courses, and for a variety of other purposes. The Regional Center can perform this important function in two principal ways:

a. Employ on the staff, on a one or two year basis, leading specialists from the United States, the United Kingdom and from other countries who have had major and significant experience in the development of new curricular materials, the training of teachers, the design and fabrication of new and inexpensive laboratory and demonstration equipment, etc., for use in training courses conducted at the center itself. Each would be available to the countries in the Region for short terms of a few days to a few weeks to assist in national or local projects.

b. Arrange tours of periods from several weeks to several months of visiting professors and other specialists from the U.K. or U.S.A. to work successively on national and local projects (including visiting lecturers at teacher-training courses) at a number of institutions throughout the region. The principal advantage would be that highly qualified specialists could be obtained for this longer period who would not be available to come from the United Kingdom or the United States for a single short-term project.

3. Regional Newsletters. A major problem throughout the region is lack of continuing communication among members of the science education community. Teachers who have had a short-course of special training, for example, return to their communities and to isolation which serves to stultify enthusiasm and the desire for innovation and progress. Several kinds of newsletters were suggested to members of the Technical Survey Team, the following of which would appear to be of the greatest general use.

a. Newsletter for Secondary-School Supervisors and Teachers of Science and Mathematics.

A professional editor at the Institute would collect from as many sources as possible, including those within the region, information regarding significant new developments in science and mathematics education and prepare a quarterly bulletin containing such items as: training opportunities in the region and abroad, brief "how to do it" articles on the demonstration or teaching of small but significant units of science and mathematics content, excerpted reprints of significant journal articles, summaries of minutes and resolutions of conferences and meetings of interest to science and mathematics teachers, etc. The basic journal would be printed in English for distribution to those areas where that language is appropriate. Ministries of Education could translate and reprint the journals in indegenous languages, possibly with support from the Center. When they desired to do so they could also add material of particular significance for teachers in their own countries.

b. Newsletter for Elementary - and Primary School Teachers.

The permanent study groups on elementary school science and mathematics would prepare, on a monthly or quarterly basis, an illustrated bulletin containing simple units of work in science and mathematics for use by elementary school teachers. The content would be carefully selected for interest and meaning, and continuing emphasis would be placed on the method of presentation — each unit prepared in such a way that individual pupils would participate. This bulletin not only would serve a useful purpose in the training of teachers, but would also prepare students for the approach to the study of science and mathematics with which they will be confronted at the secondary school level.

4. Biological Materials Preparation Center

With the rapidly increasing use of the biological laboratory as numbers of students and secondary schools multiply throughout the region, there is a growing need for a central place where indigenous biology laboratory materials can be prepared and distributed. Commercially available materials from Europe and the United States frequently have little direct usefulness in the sub-tropical Southeast Asian region. Recommended is a preparation and supply center either in connection with the Regional Center itself, or located at a medical school, but under the supervision of the Center where large variety of materials could be prepared and made available. Included would be live and preserved specimens, slides, seeds and a variety of other materials. In such a regional center, high standards could be maintained and cost would be far lower than commercial prices.

Note: The survey team understands that there is presently no commercial supply house of this type within the region. Instruction could be given to a small number of technicians from the regional countries with the long-range view of the growth of national biological supply facilities to serve national needs. It should be noted that a national unit of this nature is being developed at the Teachers' College, Penang. (It should be noted th[illegible] provision is made for preparation of new materials for physics, chemistry, and mathematics is included elsewhere in these recommendations.)

5. Research in Standards and Examinations.

No satisfactory way has been developed to reconcile the contradiction between external examinations, with their implication of the existence of a body of knowledge or list of facts to be memorized, and the underlying philosophy of modern education in science and mathematics which stresses exploration and the search for knowledge and understanding by the student. There is no disagreement, however, that there must be standards and that the competence and understanding of the student must be measured for practical reasons. To attack the basic problem, it is proposed that the Regional Center initiate a program of research into the broad problem of developing standards on a regional basis. The objective would be not to attempt to impose an agreed-upon set of standards upon any country, but to offer each country a better basis on which to arrive at its own program to establish standards and its own system of examinations.

6. The Development of Teaching Aids and Laboratory Apparatus

In each of the countries visited there was often expressed the need for the development of inexpensive teaching aids and laboratory apparatus from indigenous materials. In each country this problem has been attacked by at least some teachers and ministry officials, and some significant efforts are being carried out. Nowhere, however, did the survey team see evidence of an adequately financed and staffed major effort on a scale sufficiently large to fulfill national requirements.

On the other hand, many city schools visited were equipped with above-average, expensive imported apparatus from the United Kingdom the United States and Germany which, on the whole, failed to serve the needs and the basic philosophy of a modern secondary school science program. By modern standards, too much emphasis frequently is being placed on precise measurement through the use of expensive analytical balances to obtain the exact result in terms of relatively meaningless significant figures, necessary at the post -graduate level in research. This seemed of little value in helping the secondary-school student to understand the meaning of basic scientific concepts. Little room is left for imagination, thought and experimentation by the student. In the more remote schools, equipment remains at a minimum or is non-existent in many cases.

The Regional Center, at the minimum, would procure as complete a collection as possible of new, simple, easy-to-make demonstration and laboratory apparatus in the three basic sciences. (Physics, chemistry and mathematics; biology is treated separately). To augment this collection, there should be continuously maintained at the Regional Center a workshop where experts from the region, together with consultants from abroad, would cooperate in an imaginative program of design and invention including adaptation of new materials already in existence of teaching apparatus geared to the needs of the region. Individuals from the regional countries would join this team for varying periods of time, pursuing their own particular problems and interests and observing ideas for the development and operation of national centers. New materials developed at the center would be disseminated widely through circulation of working models and by means of illustrations in the newsletters which have been described in another place in this report.

An important section of the materials development center would be concerned with the design and production of audio-visual aids of numerous kinds. The survey team visited several national audio-visual centers where good work is being done. The audio-visual section at the regional center would have three basic functions:

a. Cooperation with the national audio-visual centers to help make their products available on a regional basis, where this is appropriate;

b. Augmentation of the work of the national centers to produce additional film-strips, film-loops, charts and other materials which can better be produced at the central place; and

c. Cooperation with the course-content teams in helping to produce audio-visual materials of various kinds needed in connection with units of study which are produced.

7. Coordination with National Science Teaching Centers.

A Science Teaching Center was established at the University of the Philippines in November, 1964, with a Ford Foundation grant to launch an initial two-year program. The Center directs a concerted effort in the preparation of curriculum materials (textbooks and teachers'guides) for elementary and high school science and mathematics and serves as a resource materials center for practicing teachers. It is seeking additional funds for a three year period during which curriculum materials would be further evaluated at the school level and editions of books prepared for publication.

The Thai Ministry of Education will build a science center in early 1967 through which a continuing program will be initiated for the annual training of 200 secondary school teachers from all regions in intensive three to six month programs. A similar center is planned by the Singapore Ministry of Education where experienced teachers will instruct new lower secondary teachers in general science subjects as well as cooperating with them in the review and adaptation of new curriculum approaches from abroad.

While Malaysia has no science center per se, a teaching center within the University of Malaya's Faculty of Education sponsors a variety of programs aimed at up-grading secondary science teachers. These include a sizable science film library, in-service and refresher courses for principals and headmasters as well as longer workshops and institutes for leader-teachers, and an imaginative program for the exchange of teaching materials within the region.

A systematic exchange of experience and ideas among these national centers through frequent seminars, conferences and travel of senior staff would undoubtedly prove beneficial to each institution. The Regional Center would serve as a channel to procure and distribute to each science teaching center new course and curriculum materials, resource apparatus and materials from abroad as well as provide funds for a regular exchange of new materials developed within the countries of the region.

D. MISCELLANEOUS PROPOSALS

1. Regional Meetings of Science Faculties

Several approaches were suggested to help solve the vexing problem of improving communications between scientists and science educators. One that has proved highly effective in other areas, notably in Central America, has been provision for regional meetings of professors in the universities and teacher-training institutions in the various fields of science and in mathematics. Such regional conferences of about 7 to 10 days duration can emphasize three important elements:

(a) lectures and demonstrations by leading scientists and mathematicians from outside the region on recent research developments in the fields,

(b) round-table discussions covering advances in methods of teaching in the field, and

(c) discussion of regional problems, with exchanges of ideas and the formulation of recommendations for improvements. The Regional Center can serve as the organizer and secretariat for these meetings. Not more than one regional meeting of this size and scope should be attempted each year.

2. Specialized Seminars

Another proposal was that workshops addressed to a particular problem or set of problems in a certain scientific discipline be organized, to which would be invited not only university and teacher training college faculty and staff but outstanding teachers from primary and secondary schools together with Ministry personal concerned with the problem. Like the other proposal, this would serve to break down the traditional barriers which have grown up between various levels and serve to promote the integration of science and mathematics instruction from primary on through postgraduate education. It was suggested by some that science teacher associations or perhaps in some instances more specialized teacher organizations in this field might play a professional role in this respect.

3. Training of Supporting Technical Personnel.

In a number of conversations, particularly in the teacher-training colleges and the universities, there was reference to the great need for well trained laboratory and equipment technicians from glass-blowers to experts in the maintenance and repair of electronic and optical equipment and apparatus. It appears feasible for the Regional Center to support a number of training courses for technicians in these categories. Some local training along these lines is being done within the region. It should be relatively easy to set up courses of a few weeks of months duration at places where the necessary equipment already exists for training on a regional basis of the technicians needed.

4. Student Motivation

Two ideas for the motivation of students toward interest in science were discussed favourably. The Regional Center could experiment, at least on a limited scale, with both, and with others which may be recommended by the Steering Committee.

(a) Traveling Science Libraries. Carefully selected collections of science books of special interest to students at the secondary-school level can be assembled, boxed and shipped from school to school where students would have an opportunity to read or examine them. This idea proved particularly useful and successful in rural areas of the United States where school libraries were of poor quality. The program eventually served as a major source of ideas for acquisitions of science books by school libraries.

(b) Traveling Science Demonstrations. This idea was also used widely in certain parts of the United States to make students familiar with the methods and subject matter of science. Small vans were fitted out with equipment and materials for the demonstration of numerous scientific principles and phenomena. They were taken by specially trained demonstration teachers to areas where science teaching was at a low ebb, and appeared to be successful in stimulating interest in the study of science. This idea, in a modified form, has been adapted in several Asian countries with considerable success, particularly in areas where schools lack satisfactory demonstration apparatus or laboratory equipment.

E. PROGRAM DEVELOPMENT

To a considerable extent the success of the Center will depend upon its contribution to the innovation of new and imaginative projects and programs within the region. To ensure that the staff and those participating in Center programs are enabled to pursue new directions and methods in science instruction as well as to follow through in their own nations on ideas and approaches developed at the Center, it is essential that adequate program-development funds be placed at the disposal of the Director and the Steering Committee.

It is proposed that twenty percent of the Center's program budget be allocated each year for development funds which may be expended in the following ways: (1) for Center projects not anticipated during the preparation of the budget, and (2) for funds to be granted by the Center to promising project activities in the participating countries. The latter might include projects conceived at the Center by participants who wish to carry out research or program activities in their own countries. Proposals submitted to the Center from individuals or institutions in the region which relate integrally to the Center's on-going program would qualify for consideration. It would be advisable for the Center to adopt a policy that all projects implenented in participating countries carry an obligation that matching funds be provided by the respective country or institution.

Examples of individual country programs which might be considered for Center matching grants would be: (1) an in-service physics institute for secondary teachers experimenting with new approaches developed at the Center by a participating lecturer; (2) a continuing effort in writing a chemistry syllabus initiated at the Center and carried on in the individual's own country under the Center's general guidance and supervision; (3) development and modification of laboratory or demonstration apparatus by an individual based upon models analyzed at the Center; (4) adaptation to the needs of the region of a film-strip on a biological process.

Support for the selective participation of science educators from the region in conferences abroad on science education and closely related subjects are likely to be regarded by the Director and Steering Committee as extremely important to the successful pursuit of the Center's objectives. Therefore, it seems desirable that limited program funds be made available to provide for the air travel and per diem costs of the attendance of deserving scientists and science teachers at such meetings. In each case, the decision should be made on grounds of the potential contribution of the particular conference to the specific aims of the Center's programs.

Program development funds might also be invested, for example, in support of participants in the programs of Summer and Academic Year Institutes in science and mathematics supported with National Science Foundation grants in the United States. For the past six years a limited number of outstanding teachers of science and mathematics from Asia have attended these Institutes under a cooperative program sponsored by the Asia Foundation and the National Science Foundation--a program which would appear to merit expansion somewhat beyond the modest numbers of individuals presently able to participate.

VII. THE PROPOSED LOCATION AT PENANG, MALAYSIA

A 73-acre site presently occupied in part by the Malayan Teachers Training College at Penang, Malaysia, appears to be a feasible and desirable location for the Regional Center. The Teachers College is devoted entirely to the training of science and mathematics teachers. More than one third of its 31-member faculty is made up of visiting lecturers from the Commonwealth and the United States. The college boasts a new science block with up-to date laboratory equipment, a large auditorium and several lecture halls, a new air-conditioned library with fairly extensive capacity, an attractive athletic field and suitable cafeteria facilities. Workshops for woodworking and light foundry work are available.

Contiguous to the site is a 24-acre plot of Penang State Land which the Chief Minister has agreed to make available to the Regional Science Center. A total of approximately 40 acres would be available to the Center including suitable provision for staff and faculty housing, hostel or flat facilities for visiting participants in Center programs as well as the additional administrative, laboratory, seminar, lecture and other facilities required for Center programs. The site occupies rolling property which for the most part overlooks Penang Harbor. Utilities are installed and are more than adequate.

The Glugor campus of the Malayan Teachers College lies about three miles outside Georgetown, Penang's capital city with a population of 250,000, and about 15 minutes from the airport which handles jet airliners. Penang Island is 45 minutes air distance from Kuala Lumpur, and 1½ hours from both Singapore and Bangkok. There are multiple daily flights to Kuala Lumpur and Singapore, and flights three times weekly directly to Bangkok. Frequent ferry service provide a 15 minute ride to the mainland, Province Wellesley, Malaysia's second largest city, Ipoh is a two hour drive from Penang.

A new National Technical Institute at Penang lies one and a half miles, a ten-minute drive, from the Teachers College campus. The Institute's extensive facilities will be fully available to the Regional Science Center and including heavy foundry and metal working shops, electronics laboratories and shops, modern physics chemistry and biology laboratories, a library, and the possibility of additional hostel facilities. There are also plans to develop Malaysia's second major institution of higher learning at Penang, a University College on a 600-acre site not far from the Glugor campus.

Community facilities are attractive in Georgetown and Penang Island. A large variety of food and fresh vegetables are plentiful. Water is safe and always in good supply. Power is steady and well regulated. Free Port status offers the resident tax free advantages on many purchases. Medical and dental facilities are good and the Island is free from malaria. There are several first - class restaurants. Hotel facilities are reasonable and adequate. Movie theatres are air conditioned and present recent foreign films. Taxis are limited, but are usually available on call and are not costly. There is a good selection of primary and secondary schools of good quality, and many churches. Recreational facilities include golf, tennis, salt and fresh-water swimming, football, boating, fishing, etc. Language is not a problem in Penang as practically everyone speaks English.

From conversations with several officials, it appears likely that exemptions for foreign staff and faculty at the Center could be obtained similar to those granted to other technical and academic specialists now serving in Malaysia. This would presumably include an exemption from Malaysian income taxes, duty-free entry of non-consumables (ie. household effects) for a period of six months, exemption from vehicle license and registration fees, and use of Federal hosteling facilities at standard government rates. Presumably apparatus and equipment for the Center would be duty exempt. It is conceivable that privileges such as the above would be granted contingent upon the award of similar perquisites on the part of other nations hosting regional programs sponsored by the Regional Center.

From the survey team's review of building costs of the Malayan Teachers College and Technical Institute, it appeared that construction cost is reasonable in Penang and equal in quality to the first - class building in other countries of the region. Air conditioning of laboratories, administrative, offices, seminar rooms and nearly all other facilities of the Center is recommended.

The abundance of schools, churches and related institutions in Penang tend to make the city and island a rather conservative and serious community. Traffic is not a problem and the island's population of 350,000 seems easily accomodated on the 110 square mile space. Ideally, the Regional Center should be located adjacent to one of the major universities of the participating Southeast Asian countries in order to take advantage of the highly trained faculty personnel in schools or faculties of science, education and engineering. Proposals to this effect were received in Thailand, the Philippines and Singapore. However, it would appear that at least some of the advantages that would be extended to the Center, were it located on or near a major university campus, may be enjoyed at Penang. Faculty from the Universities of Singapore and Malaya as well as those in Thailand could participate in vacation institutes or workshops on a full-time basis, since Penang lies less than two hours flying time from any of these areas. Laboratory and demonstration facilities in Penang while not equivalent to those of some universities could certainly serve to complement the Center's own technical and workshop blocks.

VIII. PHYSICAL PLANT AND FACILITIES

In order to get the Regional Science Center program underway, it is suggested that some of the existing facilities at the Penang Teachers College could be used while the Regional Center is being built. Office space for the Director and professional staff of up to ten would be required. Parttime use of lecture halls and laboratory space for seminars and workshops during the latter part of the first year would be necessary.

It is proposed that the permanent facilities of the center, located on the land of and adjacent to Penang Teachers College, should have a central modern building complex containing administrative offices, lecture halls, conference rooms, cafeteria, library, teaching classrooms, laboratory space, dark rooms, and workshop areas.

A separate living unit, similar to the one built at the International Rice Institute in the Philippines, would give single rooms with connecting bath for visiting participants and guest lecturers. Permanent faculty housing with individual, detached houses is recommended.

The physical plant which the survey team recommend could probably be built in Penang for around U.S. $1,500,000. Equipment and apparatus would require additional funds amounting to approximately $200,000, Library acquisitions should be budgeted initially at $75,000 and audio-visual supplies, including films and equipment at $75,000.

The question of title to the buildings, equipment and supplies is considered outside the purview of the study team as was the general issue of to whom title should be awarded, should at some future date it be decided that the Center should no longer function on a regional basis. It is recommended, however, that the body which deliberates these matters examine the status agreement regarding title and contingencies negotiated with the Government of the Philippines by the founders of the International Rice Research Institute at Los Banos, in the Philippines.

IX. ORGANIZATION OF THE REGIONAL CENTER

It is recommended that the Center be administered by a Director, Deputy Director and a Steering Committee. The success of the Center will depend to a considerable degree upon the competence of the Director, the Deputy Director and their staff and upon the interest and support of the Steering Committee.

The Director should be an Asian of outstanding ability selected from one of the participating countries by the Steering Committee. He should be exceptionally well-informed on the new approaches in science and mathematics teaching and hopefully should be well known throughout the region for his interest in science and science education. His minimum commitment to the Center should be for a period of three years on a contractual basis.

The Deputy Director of the Center should be from the United States, at least during the first two years of operation of the Center, to facilitate the procurement of the large variety of materials which will be needed and to help recruit the high-quality consultants that will be needed both for the development and operation of the Center and to assist in national programs upon request. He should be completely familiar with new approaches in science education in the United Kingdom, Australia and the United States, and preferably should have had first-hand experience in the adaptation and introduction of these methods. He should be selected by the Steering Committee and appointed on contract similar to the appointment of the Director.

The Steering Committee members, two or three from each participating country, should be persons academically qualified in all of the following fields: (1) teacher education, (2) new approaches to the teaching of science and mathematics, and (3) science and mathematics education. Preferably, one Steering Committee member from each participating country should be from the science or mathematics faculty of a university. The Steering Committee should meet at least twice each year with additional meetings as needed. At least one meeting of the two should be held at the Center. Among the responsibilities of the Steering Committee would be approval of the budget proposal, appointment and confirmation of staff, review of proposed programs and projects, consultation with Ministries of Education and participating institutions in each country as necessary, long-range planning of Center programs, and evaluation of activities.

The study team hesitates to be more specific with respect to professional and administrative staff needs, believing that the table of organization is best left to the recommendations of the Steering Committee and the Director. It is believed, however, that program officers should be made responsible for the following fields: physics, chemistry, biology, mathematics, apparatus-development, audio-visual aids in science, and special projects and programs. These persons should be recruited both from the participating countries and from outside the region--the primary criteria being competence and experience. The discipline specialists should be capable of organizing and directing institutes and workshops and giving course-content lectures in their fields.

X. INSTITUTIONAL RELATIONSHIPS

In order to ensure complementarity of the Center's programs with existing science education activities in the region as well as to avoid any possible redundancy or overlapping of effort, it would appear that among the Center's most effective contributions may be its support of modest projects already initiated or conceived on a national or regional basis under the auspices of other organizations. Close liaison should be encouraged between the staff of the Regional Center and several of the Southeast Asian organizations and other institutions assisting in educational and science programs.

The UNESCO Science Cooperation Office for Southeast Asia, now located in Bangkok, is concerned chiefly with research and documentation in the natural sciences but occasionally has supported training, seminars and refresher courses at the regional level in science education. For example, a regional seminar on the improvement of teaching in the basic sciences in developing countries was sponsored by this Office at Manila in November, 1961. It is conceivable that some Center funding might be made available to support participants in the appropriate science training activities of the UNESCO Regional Office in cases where other support is unobtainable.

The East-West Center in Honolulu has extended scholarship and fellowship assistance occasionally to science educators in the region and may provide other forms of aid to enhance science training in these countries. It would be beneficial to keep the East-West Center fully up-to-date on the Regional Center's programs as well as to make information available on East-West Center programs in science education to the persons with a professional concern with this field in the SEAMES participating countries.

The Association of Southeast Asian Institutions of Higher Learning (ASAIHL) has exhibited a keen and continuing interest in the problems of mathematics education in this region and has sponsored or is planning several significant projects in this connection. ASAIHL organized a Seminar on Mathematical Education in Southeast Asia in November, 1964, bringing together for the first time 22 practising mathematicians and mathematics educators from the area. The seminar group recommended a workshop on mathematics textbooks and syllabi for schools and universities to be held in 1966 and that a three-week summer institute on functional analysis and mathematics physics also be organized. The most significant recommendation emerging from the seminar, however, was a proposal that a Southeast Asian Institution of Mathematical Studies be created with a primary aim of improving mathematical teaching in the region's schools, universities and teacher training colleges. In the light of ASAIHL's strong expression of interest in mathematics education, there would seem to be value in having the Regional Center's Director and staff carefully explore with the ASAIHL Secretariat in Bangkok and the Association's Mathematics Committee either joint efforts in the field or a close correlation of programming in this regard. It is the study team's impression that early and effective implementation of rather imaginative ASAIHL projects in teacher education have suffered from lack of funds which conceivably might be found through the resources of the Regional Center.

It is also noted that during the working sessions of the Association of Southeast Asia, a recently revived tri-country cooperative undertaking by Malaysia, Thailand and the Philippines, a major proposed educational activity was/the establishment of a regional science education institute to serve the needs of the three member countries. It would be prudent to explore the dimensions of this proposal further during the SEAMES working session.

There would be a very logical need to correlate on a lateral basis the programs and plans of the Regional Science and Mathematics Education

Center with several of the other SEAMES institutes. Deserving special attention in this connection would be the Southeast Asian Institute of Higher Education and Development with particular reference for university staff to become better acquainted with advances in science and science education; the Regional Institute of Educational Television and Radio; the Regional Workshop for Instructional Materials, with special reference to the proposal for research on science teaching aids; and the proposed program for the translation of indigenous books.

The Ford and Asia Foundations have for the past decade invested considerable funds in support of national science education efforts within the countries of the region. Regional adaptations and modifications of several projects receiving Foundation assistance are included among the recommended program activities of the Regional Center. The staff should maintain liaison with Ford and Asia Foundation resident representatives in Southeast Asia, not only to keep informed of their programs and plans, but to determine how Foundation resources might be applied to complement the Center's activities.

There is a need to provide competent professional backstopping for the Regional Center in the United States, particularly in terms of supplying educational resource materials, identification and recruitment of consultants and specialists, placement of regional personnel in American programs and other support activities. The National Science Foundation's long experience in providing coordination and technical assistance to programs in Japan, the Middle East, Latin America, and, most recently in India, suggests that this U.S. Government agency which is credited with a leading role in rapidly modernizing U.S. education in the sciences and mathematics during the past 15 years be requested to assume responsibility for correlation of U.S. support for the Regional Center. Similar relationships should be established with the Nuffield Foundation and appropriate agencies in other countries.

XI. FINANCIAL SUPPORT

It is, of course, impractical for the Survey Team to provide a detailed budget estimate for the Center. It has been noted that the necessary land and building site will be provided by the Government of Malaysia. It has also been observed that not all of the possible program activities of the Center could be initiated during any single year.

Before a detailed budget estimate for the first year and for subsequent years can be prepared there should be appointed a regional committee presumably composed of individuals who, later, would comprise the Steering Committee. The regional committee would meet on an ad hoc basis and select the programs which would be initiated in the first and second years. It would agree upon the level at which each program would be supported and determine the basis upon which support for each type of program should be extended. Members of this committee would decide, for example, how many seminars should be held during the first year, how many participants there should be, set the travel and subsistence amounts to be paid by the Center or by the participating countries, etc. In this connection one factor to be kept in mind would be the policies adopted for the other, related programs under development.

The Survey Team proposes that the SEAMES Secretariat think in terms of an initial six-year program totalling US$6 million, including capital outlay, administration and program, but excluding the contribution of land and support from the participating countries which is anticipated in this program. The Team suggests that the following orders of magnitude would be appropriate as working figures for the Steering Committee:

First Year

A.	Physical plant and equipment Administrative and program offices, laboratories, seminar and lecture rooms, housing for staff and participants, vehicles, library building.	US$	1,500,000
B.	Maintenance		75,000
C.	Acquisitions Materials center and library		350,000
D.	Program activities		200,000
E.	Staff and consultants: salaries, allowances and support		175,000
F.	Contingency fund (program and administrative)		200,000
	Total, First Year	US$	2,500,000

Second and Succeeding Years

A.	Physical plant and equipment		-0-
B.	Maintenace and transportation	US$	50,000
C.	Materials and library acquisitions		30,000
D.	Programs		200,000
E.	Staff and consultant support		200,000
F.	Contingency		20,000
	Total, Second & Succeeding Years	US$	700,000

PERSONS IN SOUTHEAST ASIA INTERVIEWED BY THE SURVEY TEAM

Thailand

Professor Laurence E. Strong	Director, UNESCO Pilot Project for Chemistry Teaching, Bangkok
Mr. Dennis Segaller	Shell Film Unit; on loan to the UNESCO Chemistry project
Mr. Khoo Chin Hock	Lecturer, Malayan Teachers College, Penang; participant in the UNESCO Chemistry project
Dr. Pradisth Choesakul	Deputy Secretary General for Science National Research Council
Dr. Ray Hatch	Chief of Party, Michigan State Team conducting a Survey of Secondary Education in Thailand
Mrs. Songsri Chutivongsa	Supervisory Unit, Teachers Training Department, Ministry of Education
Mrs. Prapat Yudhasarnprasit	Secondary Supervisory Unit, Secondary Education Department, Ministry of Education
Dr. Kamheang Balankura	Secretary-General, National Education Council
Honorable Pin Malakul	Minister of Education
Mrs. Rojanee Chanopas	Biology teacher, Triem Udom School, Bangkok
Dr. Pitaksa Raksapoladej	Head of Science and Mathematics Department, College of Education, Bangkok.

Philippines

Mr. Wesley Haroldson	Director, A.I.D. Mission, Philippines
Dr. Ernest Neal	Deputy Director, A.I.D. Mission, Philippines
Dr. Juan Salcedo, Jr.	Chairman, National Science Development Board, Philippines
Dr. Narcisso Albarracin	Bureau of Public Schools, Ministry of Education

Mr. Aurelio Juele	Bureau of Private Schools, Ministry of Education
Mr. Gerasco Gill	Program Officer, The Asia Foundation, Manila
Mr. Raymond Johnson	Representative, The Asia Foundation, Manila
Dr. Liceria B. Soriano	Bureau of Public Schools, Ministry of Education
Dr. Vitaliano Bernardino	Assistant to the Minister of Education and Director, Bureau of Public Schools, Ministry of Education
Dr. Frank Cotui	Head, PIA Development Services Project, Evaluation Group
Fr. William J. Schmitt, S.J.	Head, Chemistry Department, Ateneo de Manila
Fr. Richard A. Miller, S.J.	Physicist, Observatory, Ateneo de Manila
Fr. James J. Hennessey, S.J.	Chairman, Department of Physics, Ateneo de Manila
Mr. Jose F. Azarcon, Jr.	Physics Department, University of the Philippines
Dr. Robert T. Ward	Project Consultant, Science Teaching Center, University of the Philippines
Dr. Dolores F. Hernandez	Director, Science Teaching Center, University of the Philippines

Singapore

Mr. Kwan Sai Keong	Permanent Secretary, Ministry of Education
Mr. Roger Sullivan,	Chief, Political Section, American Embassy
Mr. Sng________________	Senior Science Inspector, Ministry of Education
Mr. Paul Abisheganedan	Principal, Singapore Teachers Training College

Singapore (Continued)

Mr. Chang ________	Vice Principal, Singapore Teachers Training College
Mr. John G. Latter	Colombo Plan Lecturer, STTC
Mr. William Wiebe	Colombo Plan Lecturer, STTC
Mr. T. P. Horn	Colombo Plan Lecturer, STTC
Mr. Lo Chai Nyan	Colombo Plan Lecturer, STTC
Dr. Hon ____________	Dean, Faculty of Science, University of Singapore
Dr. Kiang Ai Kim	Head, Chemistry Department, University of Singapore
Miss ________ Norriss	Principal, _________ Girl's Secondary School, Singapore

Malaysia (Kuala Lumpur)

Mr. Koh ___________	Acting Dean, Faculty of Education, University of Malaya
Mrs. Cheong Siew Young	Lecturer in Science, Faculty of Education, University of Malaya
Mr. Yeoh __________	Lecturer in Science, Faculty of Education, University of Malaya
Dr. Syn Wai Yin	Lecturer in Mathematics, Faculty of Education, University of Malaya
Enche W. Robless	Deputy Director, Economic Planning Unit, Prime Minister's Department, Government of Malaysia
Enche Suleiman bin Abdullah	Principal Assistant Secretary, Economic Planning Unit, Prime Minister's Department
Dr. C. J. Eliezer	Professor of Mathematics, University of Malaya
Dr. Neville Haile	Dean, Faculty of Science, University of Malaya
Dr. Ruth Wong	Dean, Faculty of Education, University of Malaya

Malaysia (Kuala Lumpur) (Continued)

Enche Abdul Aziz bin Yeop	Permanent Secretary, Ministry of Education
Mr.____________ Richard	Assistant Advisor, Technical Education, Ministry of Education
______________________	Director, Finance Department, Ministry of Education
Mr. Philip Khoo	Assistant Director, Finance Department, Ministry of Education
Mr. Yogum	Acting Assistant Advisor, Teacher Training, Ministry of Education
Mr. _______ Arrianayagam	Acting Chief Education Advisor, Ministry of Education
Mr. Paul Chang	Chief Inspector of Schools, Ministry of Education
Dr. Rason L. Huang	Acting Vice Chancellor, University of Malaya

Malaysia (Penang)

Mr. Chye Kooi Ngan	Principal, Malayan Teachers College
Mr. Chelliah Gannasalingam	Vice Principal, Malayan Teachers College
Mr. Roy Bedford	Science Department, Malayan Teachers College
Mr. Michael Lister	Science Department, Malayan Teachers College
Mr. Lim Teik Law	Lecturer in Physics, Malayan Teachers College
Mr. Yeong ______________	Principal, Technical Institute, Penang
Mr. James Phelps	Peace Corps Instructor, Technical Institute
Additional faculty members & staff	Technical Institute, Penang
Tan Sri Wong Pow Nee	Chief Minister, Penang

Malaysia (Penang) (Continued)

Enche Kam Poo	Chief Education Officer, Penang
Enche Musa bin Abdul Hamid	Liaison Officer, Directorate of Education, Penang
Enche Osman bin __________	Director of Malay Schools, Directorate of Education, Penang
Mr. Ramanathan	Principal, Methodists Boy School, Penang, and Chairman; Steering Committee, Penang University
Mr. James Fournier	Lecturer in Biology (Peace Corps) Malayan Teachers College, Penang

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SEAMES/041.02/F4

REPORT

to

THE SOUTHEAST ASIAN MINISTERS OF EDUCATION

SECRETARIAT

A PRELIMINARY STUDY RELATIVE TO A REGIONAL INSTITUTE FOR ENGLISH TEACHING AND MATERIALS

Prepared

by

Dr. Edward M. Anthony
University of Pittsburgh

and

Dr. J. Donald Bowen
University of California at Los Angeles

June 15, 1966

A Preliminary Study Relative to A Regional Institute for English Teaching and Materials

I. Introduction

We have been asked to make a survey of the needs and resources for a program to strengthen the teaching of English in the region of the countries represented by the Secretariat, and to make recommendations that reflect as accurately as possible the priorities that member countries feel such a program should be given. To gather information and to gain insights we have visited Bangkok, Kuala Lumpur, Singapore, and Manila. Primary contacts were made with government officials in the Ministries of Education of the several countries, with school inspectors and supervisors, with administrators and staff members of institutions of higher learning, and with selected outside agencies.

Recognizing that factors not within our own competence or beyond the limit of our assignment may prove to be crucial, we have resolved to discuss the very complex problems involved in language and education in rather general terms, making only some necessarily tentative suggestions.

South East Asia is an interesting but diverse part of the world. The nations of the region have different histories, with more and greater differences than might at first be expected. Contact with European nations has varied in intensity and in selection, reflecting the influences of at least five different countries, each speaking a different European language. At least six language families (and very many languages) are found natively in the region. Three of the world's major religions are widely practiced in the area. There is much variety in government organization, and the problems each nation faces differ from its neighbors.

The wide range of history, religion, language, and politics is indeed interesting, but an inevitable consequence is the difficulty of discovering common problems that will yield to the same cooperative solutions. We have found this to be true in the case of English language teaching. In some countries English is widely known and spoken as an official language; in others it has been taught only recently and never extensively. Thus while competent teachers who speak the language well are readily available in some areas, in others the acute shortage of qualified teachers is a serious problem.

There are different attitudes towards the role English should have in the various countries of the region, and indeed these often diverge within one nation. In some there is a long-established national language; in others a national language is being developed and emphasized as a project of high priority. Although English may be available and useful, it is sometimes felt that it should not be allowed to interfere with the development of the national language.

The needs of individual students for English in South East Asia vary from introductory to very specialized advanced courses. In some cases, elementary school children learn the language; in other adults. In some countries English has an important function as a medium of instruction in the public schools and in other phases of national life; in other it occupies a more peripheral position.

Acceptance of two functions of the English language, however, seems to be shared by all countries in the region:

1) As a means of international communication
2) As a tool for education

Both suggest the need for a continuing wide use of oral and written English.

The importance of English for education and international understanding will certainly not diminish in the foreseeable future, but seems likely to increase in importance. The knowledge of virtually the entire world is available to those who read and understand English. Not only are books originally written in English on the market, but significant publications in other languages are promptly translated. The mere availability of this enormous reservoir of educational materials in English assures that the language will continue to be mandatory in modern education.

It is trite but true to say that the world is becoming smaller. More people travel today than ever before, and never has there been such extensive face-to-face contact between peoples.

This kind of contact seems certain to expand. It is important that better communication accompany the expansion. Convincing testimony is found in the great emphasis on language learning in countries throughout the world. Local and national languages have meaningful functions, and these languages of course must be cultivated and developed to better fill the needs they serve. But the day has come when a person who lacks a world language is hedged in by restrictions that limit his opportunities and his social and economic usefulness. Individual and indeed national advancement depends on the ability to communicate easily and efficiently with peoples from many parts of the world. It is an assumed responsibility of formal education to provide this skill, and no man in the last third of the twentieth century who cannot handle a world language can be accounted truly educated.

It should be kept clearly in mind that English does not compete with any local or national language spoken in the region. To emphasize good English teaching does not mean teaching other languages poorly. Indeed there is every reason to believe that quality in the teaching of one language will inevitably lead to better teaching of others. In this sense better English teaching can make a direct contribution to the improvement of language teaching in general. English, important as it is, can not replace local or national languages in the family, community, and nation, any more than local or national languages will replace English as a means of international communication. We are all immersed in a multilingual society, and we must be sure that our language teaching in this society is of the highest possible quality.

II. Present Status of English Teaching in SEAMES Countries

We begin with two nations we did not visit: Laos and Vietnam. We shall merely recapitulate what information we gathered from others.

Laos appears to continue its tradition of using French as a primary second language and the teaching of English on any major scale is relatively recent. Hence there has been less opportunity to develop a cadre of Lao teachers of English, and expatriates (including many who do not speak English natively) are serving in many schools where English is taught. It would seem that a logical first step in developing an English teaching program of national significance is to increase the training of Lao teachers in the control of English and in the basic skills of teaching it to others.

Vietnam during the present emergency has wide contacts with speakers of English from America, Australia, and other countries. Efficient communication between the English speaking foreign civilian and military personnel and the Vietnamese is a vital matter if their cooperation is to be effective. Vietnam has an especially obvious need for oral communication skills in English, a need which the schools are unable to support, because of an acute shortage of competently trained teachers. Training should be made available both in the use of English and in the techniques of teaching it.

Thailand has a tradition of English teaching in its secondary schools and universities, and more recently in its primary schools. The quality of this teaching should be improved, however, particularly in the primary schools, if it is deemed desirable to continue offering instruction in English at that level. The present not entirely satisfactory start in the primary schools may in fact handicap teaching in the secondary schools, where more and better trained teachers are available. It seems to us that one emphasis on teacher training should be on continuing remedial work for those teachers who are not adequate models of English and on a wider dissemination of training skills among the large number of teachers who are engaged in teaching English among the secondary teachers as a more extended basis.

In Malaysia most educators seem satisfied with the opportunities students have to learn English, which is used as a medium of instruction in one of the four educational streams, and as a second language from standard 3 on for most of the students in the other streams. Perhaps Malaysia's needs would best be served by the availability of research opportunities toward the improvement of methods and techniques of second-language teaching applicable to the teaching of any second language, including the national language, Malay. Possibly, Malaysia would be interested in training opportunities for teachers from the Borneo provinces, where the educational system has been more recently redesigned.

Singapore, like Malaysia, utilizes English as a medium of instruction. Over 56% of the nearly half million students in Singapore's public schools (nearly 1/3 of the total population of the country) are in the English stream. Teaching these students in English from standard 1, since almost all of them come from homes where English is not the native language, constitutes one of the most serious problems facing the schools. Further study and research in the early use of English as a medium of instruction would be a welcome help. Teaching English as a second language from standard 1 in the other streams is progressing satisfactorily as opportunities to continue the present in-service teacher training program are made available. Singapore, like other countries where good language teaching is offered, would however welcome new ideas, improved techniques, and better materials, especially since a third language, Malay, is offered from standard 3 on to students who do not use Malay as medium of instruction or as compulsory second language.

The Philippines is the third country that uses English as a medium of instruction in its public schools, at the present time from Grade 3 on.

English is taught as a second language in grade 1 and 2, and it is in these grades that the important foundations are laid, to be developed in the higher grades. It is of considerable interest in the Philippines to improve the techniques of teaching English as a second language, and this training must be given on a wide scale, since all teachers are in fact English teachers. Second language training is offered in most regular teacher-training programs, with supplementation by frequent in-service training. Again more research would be a welcome addition to the efforts of second-language teaching, which extend here, as in Malaysia and Singapore, to the teaching of the national language to children who speak a local language in their homes.

III. Implications

We have concluded from our consideration of the problems and the status of language teaching in South-East Asia that there is a role for a regional program that might include a SEAMES center for English teaching. Such a center would have to be carefully planned and its functions defined in terms of the needs and interests of the SEAMES countries. Because these needs and interests are diverse, the program of the center would have to be sufficiently flexible to offer assistance on several levels, which might range from fluency in teaching the English language to opportunities for advanced research studies.

The planning and organization of a center will not be easily accomplished, and we feel that it is wise to list and discuss some of the difficulties that should be anticipated and weighed in reaching decisions about establishing a center.

IV. Possible Difficulties

Some of the possible difficulties to be considered in organizing a regional English or language center are implicit in the description of differences among the member countries. Other problems would emerge that would also have to be solved. We list below those of both kinds that have come to our attention, in the order of probable seriousness.

1. The diversity of the region. The countries in the SEAMES region are separated at their extremes by thousands of miles. Their national interests do not always coincide. The backgrounds of participants in the center would represent such a variety of experience that it might prove hard to design a program useful to all.

2. Differences in past experience with English. As described above in the country descriptions, there is considerable variety in the role of English in different countries. As we have noted, realistic training goals in each country range from language fluency to advanced research.

3. Enthusiasm in SEAMES countries for a regional center. Many educators might prefer to accept or recommend acceptance of training opportunities in English-speaking countries. The higher prestige accorded to training in the United States, Britain, Australia, etc. might have the effect of downgrading even a good quality regional effort.

4. Quality of participants. The attitude expressed in the paragraph above might tend to assign less highly qualified or less promising students to a regional center. Perhaps this could be minimized by a compromise between regional and more remote foreign training by providing grants for the students who perform best at a regional level to visit and become

familiar with training centers in one or more English-speaking countries. This would of course entail considerable expense.

5. Solving local problems. The most difficult problem expressed by educators in some areas is the training of relatively large numbers of teachers for classroom service to satisfy the rapidly expanding demand for English language training. A regional center cannot do this very well because it is not likely to be able to handle large groups of teachers, even if the problem of financing their training could be solved. This fact suggests the obvious desirability of continuing (or initiating) national programs and of directing a regional effort mainly toward the preparation of teacher trainers, inspectors, and supervisors.

6. Staffing the center. Finding adequate, well-trained staff members is always a problem in any training program. Though there are competent people in the region, they are employed in important positions in their home countries. It might be difficult to arrange for their assignment, even on a temporary basis, to a regional program.

7. Research implications. Though it might be considered desirable to design research programs with broad implications applicable to various parts of the region, it is more expedient to limit projects to very specific situations. This is not at all disadvantageous from a research point of view, but it is a factor that tends to raise a question about the suitability of a regionally organized effort when the research activity is predominantly of local interest.

We do not feel that these possible disadvantages are too serious. They do suggest careful planning to minimize those that are real and to expose those that are fiction. Furthermore, there are advantages for training within a region rather than at great distance:

1. Relative Compactness of region Cross fertilization is likely to be much more effective in a program where time and distance encourage a continuation of contract after the formal part of the training is completed.

2. Practice Teaching. Training within the region facilitates opportunities for practice teaching - genuine shortcoming of almost all programs in English speaking nations.

3. Experimental Classes. Research data are close at hand in a country where there are numerous convenient classes in which new materials, tests, ideas, etc. can be tried out.

4. Practical Training. Training is likely to be on a much more practical level, with a realization and understanding of actual problems and conditions. Far-away programs often tend to be excessively theoretical.

5. Social Language Situation. The benefits to the teaching of local and national languages would be much more apparent in a second-language program carried out in an area where English is not the national or local language. Transfer of teaching skills and techniques would be much more likely within the region.

V. Recommendations for Program Design.

We would like to make a few suggestions which we feel might help take maximum advantage of the opportunities for a regional program. We realize that this is not the only viable design for a center, but we offer these thoughts for whatever help they may give. We feel that most activities of the proposed center divide themselves naturally into two groupings; one concerned with academic aspects, the other with service functions.

1. Academic aspects.

a. Training

Training in control of the English language for a period of from four to six months could be offered by the center to young teachers, primarily from Laos and Vietnam; perhaps those from Thailand as well.

These teachers should then be offered introductory or survey courses in linguistics and language teaching methodology. Some documentary recognition of their achievement can be provided. Not only would an intensive program of this sort be of special assistance to countries where the shortage of fluent English-speaking teachers is acute, but it would provide a convenient laboratory where materials and ideas could be tried out, a real help in carrying out a regional program.

b. Educational specialization.

At a somewhat higher level, some junior scholars with substantial home country responsibilities should be selected to attend the center for one academic or calendar year. The core of this program could consist of advanced courses in theoretical and applied linguistics, and in methods of second language teaching.

Ancillary work in literature and composition might form a part of this program - perhaps more specialized courses in testing, psycholinguistics, contrastive analysis, etc., depending on the level, quality, and extent of work completed. A certificate or a degree (undergraduate or first graduate) should probably be awarded to successful participants.

c. Research

Participation in research activities should be limited to advanced scholars who can be relieved of their home country responsibilities for varying periods of time to carry out specific projects with guidance from and consultation with the center's senior staff. A wide range of subjects would be appropriate for research projects, including educational and linguistics surveys, national language investigations, methodological experimentation, contrastive analyses, and the production of teaching materials. Those taking part in this program should be selected carefully on the basis of specific proposals and should be designated as fellows of the center.

2. Service aspects.

Services to the region might consist of the sharing of information and materials through a central office, the development of a regional reference and curriculum library, professional bibliographies, and response to requests for consultative services by the countries concerned. A periodical newsletter could help keep member countries informed. A research section to answer specific inquiries is also a desidertum.

Ample support for these aspects of the program over a number of years should be sought to enable the center to maximize its ability to serve. A carefully phased sequencing of developmental aspects is imperative. The center might begin, for example, by emphasizing its service aspects, then later add research and training functions when a library and clearing house have been established.

It should be recognized from the beginning that space requirements for a successful center will exceed room presently available at any of the regional institutions it might be attached to, and that plans for the erection of new structures to house the center should be made in the early stages of project development.

VI. Recommendations for Location

In considering possible locations where a center might be established, we are assuming that a regional program is desirable and that it would be adequately supported fiscally by the SEAMES and administratively by at least a majority of the countries in the region. The decision as to which country it should be placed in is a very important one. The center should be located where it can best fulfill its mission. We have considered the advantages of possible locations with the following criteria in mind:

1. It should be in an area where the use of English as an official language outside of classrooms would contribute to a formal program.
2. There should be strong local interest in sponsoring a center.
3. There should be an established institution capable of providing administrative support.

Three countries satisfy the first requirement: Malaysia, Singapore, and the Philippines, but only the last two fulfill the second. Singapore and Philippines also satisfy the third and they seem to us to be the most likely hosts of a center. We think either would be well able to act as sponsors, but for the guidance of the secretariat we should like to list our observations concerning the advantages of each.

Singapore has a very dynamic, capably administered school system which would not hesitate to cooperate with the research aspects of a center. There is a high enrollment (a surprising near 1/3 of the total population of the island) in the schools, with considerable linguistic variety provided by four streams in the curriculum: English, Chinese, Malay and Tamil. The research opportunities are obvious. In this multiracial and multilingual society, English occupies an important position. Most of the population is at least trilingual, and second-language teaching is taken very seriously. We feel there would be adequate administrative backing, opportunities to recruit local staff, and strong institutional support from the present (or, if the program is initiated later on, from the proposed) teacher training college, limited only by the crowded physical facilities in the college at this time. The library, while not extensive, would supply most of the books needed and could be expanded to meet future program needs.

The Philippines does not have the same kind of linguistic and curriculum diversity that is found in Singapore. There are many languages in the Philippines, but they do not overlap as in Singapore; and the Philippine languages are more closely related. Also there is more similarity in curriculum design; nothing like the four streams in Singapore is available.

There are some Chinese private schools in Manila that would provide on opportunity for limited curriculum research and experimentation. Other public schools in convenient commuting distance would use Tagalog as a medium of instruction for the first two years, teaching English as a second language and as the medium of instruction from grade three on. Private schools are available where English is used as the medium of instruction from grade one.

A Philippines-based program would have rich staff resources. Besides the 150 scholars trained in programs established in the country, another 150 scholars have gone abroad in the last eight years for special training in teaching English as a second language. Approximately half of these have finished a master's degree, and 8 or 10 a doctoral program, with others presently in training.

We feel that a regional English language program should be organized at an existing institution of higer learning for academic atmosphere, for access to existing libraries, and for administrative support. Two Philippine institutions seem qualified to sponsor a center.

One is the University of the Philippines, located on an extensive campus in Quezon City. The University has had experience in dealing with students from other Asian countries. One example is the Asian Institute for the Training of Teacher Educators sponsored by UNESCO, whose director is the dean of the Graduate College of Education. The College offers a master's degree program which presently serves secondary school teachers who are replaced by Peace Corps Volunteers during the period of their study. Additional support in the English teaching field is provided by a qualified staff of teachers in the English Department of the College of Liberal Arts. The University occupies a position of prestige in Philippine education.

Another likely location for a center would be the Philippine Normal College which for seven years has had a strong graduate level program of specialization in English teaching. This program has been supported by the Bureau of Public Schools (which pioneered the efforts to subsidize graduate study in the country by providing full salaries to participants), by the Philippine Center for Language Study, (financed by the Rockefeller Foundation) and by the Ford Foundation, whose development grant has enabled the College to assemble one of the most complete libraries in the region, to strengthen its teaching staff, and to undertake a dynamic research program which emphasizes actual teaching problems as well as theory, and has resulted in significant contributions to the profession. (One M.A. thesis has been revised, and, published in book form, has become a widely used handbook for language teachers.) The teaching staff of the College English program includes four full-time people trained to the Ph.D. level. The College has offered training to one group of English teachers from Afghanistan and has been asked to train another. The College's Language Study Center, however, is housed in crowded quarters that barely serve its needs. Additional responsibilities would have to be accompanied by more space than is presently available.

VII. Recommendations for Staffing

Our problem that deserves attention, if a center is to be established, is the source of personnel for a staff. We feel that as far as possible senior personnel should be drawn from the region the center is designed to serve. Staff members on loan from Ministries or schools in member countries could make the most useful contributions to an oversll program. At the same time they would take home after their assignments valuable experience most useful in teaching and supervising language instruction in their own school systems.

It would be well, however, to plan to include on the staff some expatriates who are native speakers of English, and the possibility of some expatriate senior staff members should not be entirely removed from consideration. We recommend that these should be recruited in various parts of the English speaking world. This would underscore the importance of English as a world language, one of the important justifications for establishing a center in the region covered by Southeast Asia. It is most important to find competent persons to make a valid contribution. One possible source of native speakers that has been called to our attention is successful Peace Corps volunteers favorably recommended on the basis of actual English teaching service. They could possibly be assigned as a junior staff on an extended tour under Peace Corps sponsorship or could be enrolled under a personal services contract when they terminate their Peace Corps assignment. These volunteers are an excellent source of teachers for an intensive language program, and would undoubtedly be able to make a contribution to the methodology courses. Another source of junior staff is current or recent graduates of American, Australian, or British specialized training programs, since many of these students would welcome an opportunity for service and experience in areas where English is taught as a second language.

We have had two dominant feelings as we have prepared this report, those of gratitude and inadequacy. We are most grateful for this opportunity bo become more closely acquainted with the region and with the educational problems and policies of each of the four countries we visited. We have learned much from this experience and we feel we have gained insights that will be beneficial to us when we return to our own universities.

Our inadequacies are more complex and stem from several sources:

1) Our visit has been very brief one, and we are aware that it is difficult to understand a situation well from a limited and hasty observation.

2) We are visitors in Asia, outsiders looking in; the possible advantages of an impartial evaluation are far overshadowed by our inability to feel deeply and truly the motivations for policies and patterns. We realize that the Secretariat will properly make its decisions on considerations that will go beyond the recommendations we offer, but we hope that we have been able to organize a few observations that will be useful in arriving at that decision.

Addendum:

Possible Staffing Pattern. Although prediction of the number of participants in a regional center program is difficult, it is perhaps possible to make a tentative recommendation on the basis of the proportion of staff to participants on three levels:

I. Intensive Work in English. The proportion should approximate 10 students to one staff member. If we assume that a first program might consist of 50 students, a staff of five would be required.

II. Teacher Training. A somewhat larger teacher student ratio appears reasonable here. Assuring an initial group of 15 to 25 teachers from the region, a staff of 3 is indicated. Should the number rise above this, additional staff should be sought.

III. Research Research staff could conceivably be ad hoc selections from the Teacher Training staff, perhaps until the number of research fellows exceeded ten. Precise research staff numbers may depand on the special nature of the research proposed. Probably at least one person should have research direction as a major responsibility.

These estimates do not include the director of the center (who might wish to participate on more than one level) nor do they include necessary clerical staff.

SEAMES/041.02/F5

REPORT

to

THE SOUTHEAST ASIAN MINISTERS OF EDUCATION
SECRETARIAT

A PRELIMINARY STUDY
RELATIVE TO
REGIONAL COOPERATION
IN
EDUCATIONAL RADIO AND TELEVISION

Prepared

by

Dr. Arthur Hungerford
The Pennsylvania State University

and

Mr. Jack McBride
Nebraska Educational Television Network

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* * *

A Preliminary Study Relative to
Regional Cooperation
in
Educational Radio and Television

I. INTRODUCTION

All indications point to the fact that radio, television and the other educational media will be used increasingly in the future by the countries of Southeast Asia. The need to improve education is universal in modern society. A country's economy, even national survival, is dependent upon a viable educational system and sustained educational improvement. Education must increasingly command national attention and priority. In Southeast Asia, as in the majority of areas of the world, educational needs are massive. Countries have major distances to travel to make educational systems comparable with the most developed, and must do so rapidly.

The mass communications media are naturals for the developing countries. These media offer widespread distribution--in certain areas virtual nationwide coverage. Quality instruction can be produced favorably to affect both students, teachers and home viewers. In terms of the numbers influenced, radio and television instruction can be provided economically. In view of such problems as increasing population, shortage of qualified teachers and limited resources, radio and television become all the more important to these nations.

Further, most Southeast Asian countries currently have operable certain radio and television facilities which could, at least in part, be used for educational purposes. According to plans and developments described to the writers of this report, additional broadcasting installations are planned and existing facilities will be improved. Decisions have thus already been made by most countries to use and expand educational radio and television. Present programs, however, need strengthening and reinforcement to achieve their maximum potential.

Precedent has already been established in a number of activities to consider the Southeast Asian countries as a region. Geographic, ethnic, sociological and other common characteristics make such a focus quite logical. And the benefits to be obtained from pooling certain resources for common development and usage are obvious.

This report will not document the value of radio and television to education; research studies, a variety of literature and other data are readily available to any interested party. Instead, those preparing this document will concentrate on the specifics of their assignment: a feasibility study of the cooperative regional development and the use of educational radio and television.

Under the auspices of the Southeast Asia Ministers of Education Secretariat (SEAMES) and with the coordination of the United States Agency for International Development (USAID), the undersigned travelled during the course of a two week period to Manila, Bangkok, Singapore and Kuala Lumpur to meet with national education and educational media officials and specialists most knowledgeable about local programs and developments. The team gave first-hand study to existing educational communications projects and talked at some length with their operational and administrative staffs, as well as with officials of the various

Ministries of government. Special attention was directed to the potential of cooperative regional developments in educational radio and television. Obviously a definitive document cannot be prepared during such a short period.

Nor can exhaustive study be given to the problems and possibilities of regional cooperation. Yet, certain factors emerge quite clearly. Based upon the many interviews, meetings and on-site investigations, upon the literature available, upon previous knowledge of the region and countries involved, upon the status of current programs and indicated plans for improvement, expansion and development in the SEAMES countries, and in view of the NEED, it seems quite clear that a regional development involving the educational media (with particular though not exclusive emphasis on radio and television) is desirable, is feasible, is needed, would be highly productive and should be pursued. The potential for regional development, the economies effected through cooperation, and the other benefits to accrue to participating national education agencies appear to be substantial. With this decision in the affirmative, the team next directed attention to the specifics of such a cooperative regional development.

II. PRESENT USE OF EDUCATIONAL RADIO AND TELEVISION IN SOUTHEAST ASIA

Philippines

Educational Radio: The Bureau of Public Schools in the Ministry of Education began experimental radio broadcasting in 1959 using facilities of the Philippine Broadcasting Service which is also an arm of the Philippine government. The Radio Education Unit has produced the programs which are now heard in most parts of the country via nine radio stations which pick up the Manila station of Philippine Broadcasting Service and re-broadcast locally.

Subjects covered are Filipino I and V; English II and III, Physical Education, Social Studies, Music and English for Teachers. The basic pattern is to produce one 15 minute program per subject per week and broadcast each program twice - once in the morning and once in the afternoon. While this is a good beginning, many more programs per week will be required if radio is to make its full contribution to Philippine education.

Recently the Catholic Church secured financial assistance from West Germany and will set up an independent broadcasting service at high power to reach the church schools. The Catholic Service also will broadcast some or all of the Public School Service, giving greater coverage for these programs in some areas of the country.

It should be pointed out with emphasis that there appears to be full cooperation between the public and private educational systems in the Philippines. Although 90% of all elementary students attend public schools, about 60% of all secondary students attend private schools, many of them are Catholic.

Educational radio in the Philippines needs much more financial support. There is not even enough audio tape stock to permit retention of current radio programs for possible replay in another school term. The production staff is too small. Higher power transmitters are needed - and more receivers. However, it appears more practicable to assist education radio in the Philippines at the national level rather than the regional level.

Language barriers necessarily inhibit the interchange of radio programs among the countries in Southeast Asia. However, since trained staff is also a serious problem, a Regional Training Center certainly would be of great assistance.

Educational Television: The principal television production activity in the Philippines is at the Ateneo de Manila where Father Leo J. Larkin, S.J. has constructed a pilot studio and from which programs are fed by closed circuit co-axial cable to the complex of schools on the Ateneo campus, ranging from elementary through college. In order to make some of these programs available to the public schools a coordinating organization has been formed known as the Metropolitan Educational Television Association (META) which involves most of the groups interested in school television. This organization has secured additional funds to underwrite the production of courses in Physics and English. These are broadcast free by commercial stations at present, utilizing otherwise unused morning and afternoon time segments, but next year a charge will be made which poses a serious strategic problem. Father Larkin also has played a leading role in META and is, in fact, the strongest educational television leader in the Philippines. His studio facilities are adequate for experimental production, some video tape recording, and for training personnel. He has been very active in all these fields. Yet, it is clear that additional facilities will be needed in Manila since the Ateneo Educational Television Center is already overloaded.

The Bureau of Public Schools is hoping through META to increase the number of metropolitan schools participating in the school television service, and to increase the course offerings so that schools will find it more worthwhile to purchase receivers. (There are no central funds for this purpose). The same public school radio/television production unit referred to above, and now a part of the Radio, Television and Audio Visual Division, looks to the day when it will have a television studio of its own (probably at Philippine Broadcasting Service or in a new building being planned for the Ministry of Education).

The Ateneo also is planning some expansion in its use of educational television. Father Larkin expects to be distributing 19 courses in the next school year through his closed circuit system, mostly from previously produced video tape recordings. By utilizing a new broadcast service in the 2500 megacycle band he hopes to reach pilot public schools with multiple simultaneous transmissions and thus supply a good share of his 19 CCTV courses to the public schools as well.

There is need for additional TV production facilities in the Manila area. It is also apparent that these facilities should be of a highly professional character, since the commitment to educational television by educators in the Philippines seems to be substantial. Therefore, some sort of Regional Production Center does indeed seem warranted.

Institute of Mass Communications: Another emerging group is the Institute of Mass Communications at the University of the Philippines. Although the program derives principally from a journalism orientation, UNESCO is assisting, with staff, equipment and money, to set up a strong curriculum in broadcasting. A new building is planned which will include one radio studio and one television studio at the start; double that in the future. The Speech Department at UP offers a sequence of courses to prepare radio producers. These courses are being coordinated by the Institute. If all goes well, this Institute should contribute substantially to solving the regional problem of training professional staff - except electronic technicians (see later). The Institute also is much interested in Research which can be of great importance to the users of mass media in the countries of Southeast Asia.

Thailand

Educational Radio: This country has a well developed radio system and school's radio program. The General Educational Broadcast Service is twelve years old; the School Broadcast Service about eight years. The School Service is aired from 9AM - 2 PM weekdays.

School broadcasts are in three subjects: English (6 levels) at a rate of one twenty-minute broadcast per level per week; Social Studies (2 levels) at a rate of two fifteen-minute programs per level per week; and Music (3 levels) at a lesser rate. In the new academic year additional programs are being offered.

The programs are designed principally to be supplemental to classroom instruction. But the English programs are considerably more than this, using model English speaking voices. Transmitters are in Bangkok (medium and short wave) and are operated by the Bangkok Technical Institute which benefits by having a practical radio "laboratory". The programs are produced by the well-trained staff of the Educational Information Division in the Ministry of Education. The Division also maintains its own studio at the Ministry location and it is adequately equipped with modern production and recording apparatus. A studio at the Technical Institute is used for "live" programs. Receivers are provided to deserving schools; other sets are purchased locally.

The Australian government has been most helpful both in Thailand and in the Philippines. Soon a 10 Kilowatt transmitter will be delivered from Australia under the Colombo Plan. This should correct some of the current reception difficulties in remote areas of the country.

Educational Television: Experimentation with educational television is very recent. The Bangkok Municipal School System provides twelve programs per month. Two lessons per month in English are broadcast to each of Grades 5, 6 and 7; the remaining programs are in Social Studies, Science and Music. About 65 schools - all elementary - participate in the service. The programs generally are videotaped when aired and repeated once later in the day or week. Each school gets at least one set from the government and may acquire others as finances permit. Some TV sets in Thailand are made at a factory operated by the Army and are very reasonable in price - about $135. In fact, the Army occupies a most unique position in Thailand, running about 60 radio stations and one television station in Bangkok - channel 7.

The school television production staff is very small. Technical production is handled by Bangkok Channel 4 which is also government owned, though not by the Army. All radio and television stations are owned by government departments and most are operated commercially to defray part of the expense. Channel 4 does not charge for its services to the educational TV group.

Staff training for producers and other programming people is a serious problem in Thailand as well as elsewhere. This is further evidence of the need for regional cooperation in this regard.

In addition to the Bangkok Technical Institute mentioned above, the Institute of Telecommunications trains technicians in the field of telephone, telegraphy, tele-typewriters, microwave and television. Some good equipment is on hand - mostly Japanese - and a fine studio space is available, awaiting the installation of air-conditioning and supplementary electronic equipment. When this is completed, the Educational Information Division of the Ministry of Education will have available a good TV Production facility which will double as a "laboratory" for technician training at the Institute. However, this studio is some distance from the Ministry. The Educational Information Division has plans to equip a television studio adjacent to the present radio studio at the Ministry, where videotape recordings could be produced.

In summary, if present plans of the Educational Information Division and others evolve, there will be radio and television production facilities at the Ministry location and additional studios and transmitters for radio at the Bangkok Technical Institute and at the Institute for Telecommunications for TV.

It should be added that since the Bangkok Municipality is concentrating on elementary education, the Ministry group will specialize in the secondary area. These programs have country-wide applicability and were it possible to distribute them to other parts of Thailand, the benefits of educational television could be shared by a far larger number of students. A microwave network is planned; first to distribute radio, and later on television.

The situation in Thailand is favorable for regional cooperation. The staff stresses, however, the need for the careful coordination of the efforts of UNESCO, the Center for Educational Television Overseas, Asia Broadcasting Union and SEAMES. All of these groups have some plans for regional cooperation in radio and television for educational purposes.

Singapore

Educational Radio: This service has been suspended as a result of several factors including the political separation between Malaysia and Singapore. Prior to this, Malaysia had been paying part of the cost. It appears that the radio service, while of good quality, was not vitally related to the curriculum of the schools; being at best enrichment.

It is planned to begin a new radio service later on, after television is launched. At present all attention is focused on the latter.

Educational Television: The plans for educational television are on the verge of implementation. Studies have been completed by staff at Teachers Training College, with the help of an expert from Center for Educational Television Overseas (CETO). These plans presently are up for financing at the cabinet level. These are very sophisticated plans. A decision to proceed is awaited momentarily.

The educational television project is centered in the Audio-Visual Department of TTC and is favored with able leadership. There are two aspects - school class observation for teacher training and an educational television broadcast service to the schools.

Singapore is a unique situation. It is a city state. Economically the city appears relatively well off, although there is a realization that more industrialization is needed to assure its continued eminence. It is a concentrated geographic unit; yet it incorporates all social strata. Singapore has made major progress in school construction and modification in recent years. The educational leadership is strong.

Already the educational television planners realize that they will require more than one TV channel and they propose to utilize a coaxial cable system to reach the 400 schools as the second phase of their project. For a start they will produce video tapes at TTC in new studios - the space for which is in an advanced stage of construction - and have them broadcast by TV Singapura which is operated by the Ministry of Culture.

As a second phase of the educational television operation at TTC, a TV mobile unit and videotape recorder will be acquired to produce on-location videotapes of the conduct of teaching in actual classrooms and these videotapes will be played at TTC to help student teachers learn better pedagogy.

The team was very much impressed with the thoroughness of the planning and the degree of commitment to educational television at the highest educational levels. This project has the potential for becoming a model for other cities in Southeast Asia.

Malaysia

Educational Radio: As noted just above, Malaysia used to support financially the Singapore Schools Radio Service but as Malaysia grew more independent the need for its own special service became apparent. So they withdrew support of the Singapore service, which subsequently ceased. Now Malaysia has just begun their own radio service to the schools. Two adequate studios are just completing in Kuala Lumpur in a modified building and the multi-lingual staff is now producing 6 programs per week for the schools - in four different languages, Tamil, English, Malay and Chinese. This means 24 programs per week - 4 versions of each of 6. The programs are related closely to the syllabus which is the same for all language steams of education.

An Advisory Board consisting of high officials of the Ministry of Information and Broadcasting and the Ministry of Education - and a few laymen - decide what subjects are to be supported by radio programs. Content specialists supply the material and the radio producers in the Ministry of Information and Broadcasting do the rest: write scripts, translate into the other languages and produce the programs on audio tape in their own educational studios described above. The tapes are repeated as necessary and the best ones are retained for future replay. All cost is borne by the National Radio Service.

Although the Schools Radio Service is new, it is well provided for and there seems to be a strong interest in the service. Coverage is practically 100% of the country. Radio stations are connected by microwave by the Telephone Company so that broadcasting on a national basis is a fact. Plans for a new Radio House which will bring together all the radio activities, including educational radio, are practically complete and construction will start soon at a beautiful site, near the University of Malaya, where the new Television House already is partially completed.

Educational Television: Television is still very new although it has developed rapidly. 60,000 sets have been licensed at $4 Malay per year.

Another 30,000 unlicensed sets also may exist. An adequate broadcasting plant is soon to be replaced by the magnificent new TV House at the site mentioned above. This will consolidate radio and television in what may become the largest and most comprehensive broadcasting complex in Southeast Asia. TV is broadcast only in the evening on weekdays. Some daytime telecasts are added to the weekend evening schedules. Programs are a blend of local production (40%) plus packages from USA, England and others. Eleven transmitters along the west coast are connected by microwave. Soon this service will be extended to the east coast.

There has been one experimental series of educational television - last year - in Science and a new series in Biology is planned for this fall. These programs will be videotaped in August. Four teachers, called presenters, have been screened from 200 applicants. Content is the responsibility of the Ministry of Education officials who prepare the lesson plans. The TV producers then convert the lesson plans to television scripts and produce them. At present the working arrangements between the educators and the telecasters are informal. Ultimately the same Advisory Board which operates in the radio area also may serve a similar function for educational television.

Malaysia is a young and vigorous nation. National resources in minerals, rubber, etc. are extensive. The people are enterprising and eager to build a strong and proud nation. This indicates that their educational broadcasting will be effective too - once it has had a chance to grow.

Of principal interest to the broadcasting officials in Kuala Lumpur is a Broadcast Training Center which both Iran and Malaysia have offered to host. Such a Center is a recommendation of the recent UNESCO Bangkok conference on radio and television. While this project would serve all broadcasting - and not educational broadcasting particularly - it does have relevance for regional cooperation. It is not the same function as delineated later in this report for training educators to be successful broadcasters, but the purposes are at least parallel and it will be important to avoid any duplication of effort along these lines.

III. FUNCTIONS OF A REGIONAL CENTER

From the reporting of the present situation in Southeast Asia, it becomes clear that there is a substantial need for regional cooperation and the development of a regional service which includes the following functions:

1. Training of Staff.
2. Sharing of Materials.
3. Informational Clearing House.
4. Research and Evaluation.
5. Professional Production Facilities.
6. Technical Services.

Training of Staff: Everywhere the team went, there was agreement that the recruiting and training of qualified personnel is a serious problem. There are two types of personnel involved - technical and non-technical.

Fortunately so far, in such countries as Thailand and the Philippines, the broadcasters have been very helpful in supplying technical facilities, and this has relieved the educators of serious concern with technical problems. However, as the use of educational radio and television grows, particularly when educators begin to operate their own production facilities for pre-recording programs on audio or video tape, their need for qualified technicians will mount. Fortunately, each nation has, or will develop, technical institutes like those in Bangkok to provide electronic personnel to government and industry - including educational radio and television. More appropriately, this is a national rather than a regional responsibility.

Thus, the team feels that there is little need for regional training of electronic technicians - at least below the college level. Of course, countries like Laos can take advantage of the fine technical institutes in Bangkok, pending the development of their own technical schools.

There is, however, a very great need for regional cooperation in the advanced training of educational radio and television personnel, including writers, producers, directors, graphic artists, film producers and those teachers who will appear before the cameras. It is hoped that as much basic training as possible will be conducted in individual countries so that any regional center could concentrate on the more advanced phases of training. A Regional Center should train the trainers; those who will return to their countries to train others. The numbers needed in each individual country are not large but in the aggregate the demand clearly justifies a Regional Training Center. To be most effective, this activity should be affiliated with a university and also should have access to production facilities, including at least a radio studio, a television studio, graphics and audio-visual units, and a motion picture studio.

It is also quite clear that this training program should include work in all of the instructional media, since television, particularly, makes wide use of nearly all techniques and materials. Furthermore, the utilization of other audio-visual materials to supplement the use of radio and television is practically a necessity, i.e. charts, posters, films, teacher guides, tapes and records. The recent up-surge in the use of 8 mm film loops is another case in point.

In summary, there is abundant evidence that the use of radio and television in education in Southeast Asia can be improved through the establishment of a Radio and Television Regional Training Center.

Sharing-of-Materials and Library Functions: Through sharing educational materials in the Southeast Asia Region, great savings in cost can be realized. For example, the Center for Educational Television Overseas (CETO) has developed kits of materials which can be used in many countries. Included might be short film sequences on biological events, slide films, strip films, pictures, etc. The point is that certain VISUAL materials, at least, can be used in most Southeast Asian countries. Audio supplements can be added by each country in appropriate national languages.

This notion of sharing materials can become a most important function of any Regional Center. This function also is compatible with the training function, since students would learn the practical value of using such materials in the production of programs.

Another phase of sharing materials would be the establishment of a library of videotapes, films and audio tapes, from which duplicates could be run off for use in any participating country. For example, it may be possible to dub a national language on to a videotape previously produced in some other language, perhaps a course in physics. The same thing can be done with films, of course. This technique takes advantage of the visual elements which can have international utilization just by substituting appropriate sound. Tape and film libraries already exist in the United States and the utilization of their services has saved much needless duplication of effort and a great deal of money. Also, a major educational resource exists in each country in the film libraries of USIS, British Information Service, etc.

Another function of the library staff would be to keep abreast of the production of instructional materials throughout the world and, with the help of curriculum experts, to acquire for the Library those films, tapes and other materials which might have wide applicability on a regional basis in Southeast Asia.

Informational Clearing House: Akin to the library function but significant in itself is the need for authentic up-to-date information on all aspects of radio, television, film etc., as these might affect the use of these media in Southeast Asia. New equipment is constantly being produced. New techniques in production and utilization are just as frequent. New research is reported. Unless an effective clearing house is set up to collect, evaluate and distribute such information, costly mistakes may be made or duplication of effort may result. One important area which needs immediate attention is the matter of copyrights and teacher and producer rights and responsibilities. A Regional Clearing House could work toward standardization in this aspect.

Research and Evaluation: As the use of educational radio and television expands in each Southeast Asian country, it will be helpful to systematize evaluation procedures and to initiate constructive research to determine the best ways to utilize all instructional media and materials. One example of needed practical research is the design of tropical school buildings for more effective reception and utilization of classroom radio and television. Also, it seems quite possible that the combined purchasing power of these Southeast Asian countries could be directed toward influencing manufacturers to produce in quantity less expensive television receivers particularly suited to use in the tropics.

Research staff are highly trained - certainly at the graduate level - and such staff members are hard to recruit. The concept of using these experts on a regional basis is attractive. They can help plan and evaluate the research going on in each country.

Professional Production Facilities: This item is not so much a problem with radio as with television because most countries can afford to purchase professional radio recording equipment, microphones, consoles, etc. Not so in TV where the best cameras cost $20,000 each - or $60,000 in color. Therefore, most national pilot projects in educational television begin by using the equipment of others or by using equipment which has less capability, which is less professional, and considerably less expensive. This is as it should be for a beginning because a country must be certain that its educators intend to make a substantial commitment to radio and television (modifying the curriculum, etc.) before huge investments are made, particularly in television.

Southeast Asia presently is in that stage where most countries are using educational television on an experimental basis. It will be some time before the level of operations reaches a stage which would justify the highest quality production equipment in each country. Hence some sort of regional cooperation is very much indicated. This would involve setting up one or two first-rate production centers which all countries in the area could use for special projects requiring the highest quality of content and technical production. While the use of such a center would be somewhat inconvenient for all countries other than the host country, these very inconveniences may be turned into advantages. Admittedly it would be difficult to spare a producer, teacher and curriculum expert to go out of the country to a Regional Production Center to spend a month or so making a high quality series of lessons. Yet it may be that this kind of complete separation from daily routine, which would be essential in any case, and which seldom can be achieved when remaining in the local scene - is the only way that true excellence can be obtained. In fact, this proposed Regional Production Center should be thought of as a Center of Excellence.

Such a Center would have the latest type equipment including Color and Black/White cameras, the best in video and audio recording; one studio each for radio, television and motion pictures. There would also be extensive graphic arts and photographic facilities, plus provision for preparing and reproducing supplemental materials for teacher guides, student handbooks, etc. The staff would be thoroughly professional so that the efforts of the teachers and their associates would be efficiently utilized to produce quality productions. Here, master video tapes, films and audio recordings would be produced and stored, and duplicates made for use in the sponsoring country.

Every effort would be made to maximize the utilization of materials. For example, the visuals used in these televised lessons would be used also in teacher guides. Audio tapes would be made of all TV lessons where some utility of the sound portion alone could be justified, etc.

Ideally this production center should be near most of the functions described above, particularly the library of instructional materials referred to above.

Technical Services: Affiliated with the Production Center and relying upon the same highly professional staff would be a Technical Services Department. For those using the center this would mean production assistance of all kinds, and support services like graphics and photography, for use in producing quality programming. For example, prototype instructional materials could be produced at the Production Center, with mass production in the individual countries.

In addition to all this, the staff could act as consultants to the planners in each country assisting in setting up pilot projects and recommending types of equipment to use and techniques to employ. These might include pilot production centers, microwave networks and transmitters of all sorts. Thus, the region would have at its disposal a group of experts in all phases of radio and television.

In summary, there are several important functions which would be better served through regional cooperation. Most of these functions are closely related and probably should be grouped in one place or in close proximity. However, certain functions may be separable without undue impairment of efficiency.

IV. DEMONSTRATION FACILITY AND PILOT PROJECTS

It is important that there be in Southeast Asia at least one comprehensive installation in radio and television to which government leaders, financial specialists, educational planners and curriculum and communications experts can come to see radio and televised education in active and effective use. A Regional Telecommunications Center having the functions discussed above should be augmented to include this phase as well.

In addition to the production of radio and television programs there must be available demonstration systems of the important phases of distribution and utilization.

Radio programs are generally broadcast over the air to homes and schools, but TV offers a variety of distribution methods: by multi-channel coaxial cable from studio to schools directly and privately; by regular television broadcast stations (the usual way in Southeast Asia at present); or by multi-channel low-power transmitters - the 2500 megacycle band. The Regional Center should have operating systems of all three types with certain schools being reached by each method. Then, those educational and government planners can choose the systems best suited to their particular aims. For example, if the Bangkok Municipal educational television project should expand to a point beyond two simultaneous TV programs going to the schools, another distribution system would be mandatory because there are only 2 television stations in Bangkok. To add a third and a fourth would cost millions whereas low-power 2500 megacycle channels may be added much less expensively. Or, if the schools are quite close together a coaxial cable can be connected from the studio to the schools. Such a cable can carry 12 or more simultaneous televised lessons plus 10 - 15 FM radio services.

Visitors to the Demonstration Facilities will have even more interest in how radio and television programs are properly utilized. This is the third, and probably the most important aspect of education by radio and television (the other aspects being the production and the distribution of the programs). To demonstrate this there must be a considerable number of classrooms which can be visited at random where television receivers of good quality are installed; where a teacher will be properly preparing her students to view or hear an up-coming program; where the teacher will watch with the students and help them to get the most out of the program; and where the teacher will demonstrate the proper methods of following up the radio or television programs with activities which will contribute solidly to learning.

It should be understood further that each participating country will establish and operate a rigidly structured pilot project in radio and television, so that the benefits of a Regional Center can be fully utilized. These national pilot projects will vary in scope and purpose. In some countries there will be production centers making video or audio tapes which are then broadcasted by local radio or television stations. Other pilot projects will involve complete operation of educational broadcasting stations. Still others may use closed-circuit. Part of the responsibility of any Regional Center would be the support of each pilot project to assure that in each country there is a model of excellence in educational radio and television. (Obviously, the host country of a Regional Center would relate its pilot project closely to the Center itself). Whatever the nature of the pilot projects in individual countries, it does seem clear that the distribution patterns of educational radio and television should be developed on a national basis. The needs will vary from country to country. Consultants from the Center can help planning the best systems.

V. PLACEMENT RECOMMENDATIONS

Because of the extensive training job to be accomplished and because of the many advantages accruing from placement within a scholarly and academic influence, the regional telecommunications center should ideally be located in and become a part of a Southeast Asian university complex. Within the limitations imposed by short-term study, and following a tour of the majority of countries which might be involved in a SEAMES educational radio and television project, the undersigned come to the conclusion that such a regional center might best provide area-wide service by location at Manila, the Philippines.

Three major elements contribute to this decision:

1. Educational television experience: In the Center for Educational Television at the Ateneo de Manila University, there exists the most experienced educational television operation in the region.

(A developed production center, training center and closed circuit TV development at both the elementary, secondary and collegiate levels; educational television clearing house experience; regional educational television leadership and counselling through Father Leo Larkin, S.J. and his professional staff.) The Metropolitan Educational Television Association of Manila (META), as earlier indicated, has taken a leading role in schools television development. The Ministry of Education has supported television instruction from inception.

2. Educational radio experience. The Ministry of Education has developed one of the best and most successful schools radio programs in the entire area.

3. Educational media training potential. The Institute for Mass Communication at the University of the Philippines has made remarkable progress in a very short period since its creation. It has assembled key faculty, is preparing a new building, and holds much promise for future development. UNESCO has already designated the Institute as the regional educational communications training center for Southeast Asia, has provided certain funding, and is sending trainees from the region to the Institute for advanced work. A precedent has thus already been established. The Institute has experience in conducting short courses, seminars, workshops and conferences, and is designed to conduct a competent research and evaluation service.

These three factors offer a foundation upon which could be developed a regional telecommunications complex which, in the opinion of the team, could most economically, efficiently and productively provide the variety of service functions recommended. Also, by building upon and strengthening existing programs and facilities, services should be provided the region sooner than otherwise might be possible.

In thinking of further definition of placement, at least two alternatives appear:

1. location of all service functions within one center and under one roof, or
2. location of all service functions under one administrative unit, but in several locations within close proximity.

Ideally, the Regional Production Facility, the Training Center, the Research and Dissemination Service and the Technical Services should be housed together in order to provide the greatest service and efficiency. However, in order to take fullest advantage of the leadership abilities and other talents; the existing programs and facilities in the several countries; practical considerations may make such total consolidation unrealistic. It may be that some decentralization will serve better the aims and aspirations of all concerned. If this does happen, such division should be kept to a minimum and every consideration should be given to placement in the closest proximity. It might be that SEAMES would want to draw a prime contract with the Philippines Ministry of Education, with the University of the Philippines and the Ateneo co-partnering through sub-contracts. In order to take advantage of Father Larkin's outstanding administrative and leadership abilities, the Ministers should seriously investigate the possibility of a leave of absence from his current assignment to serve the regional project.

To insure successful regional cooperation, several additional factors must be kept in mind:

1. The Center's training facilities must not be too dissimilar from extant domestic equipments.

2. The principal language medium should be English since it is the most common second language.

3. Qualified professionals at the Center should be recruited from a number of Southeast Asian countries.

4. Allowance must be made for varying technical line standards (625/30 and 625/25 may be needed).

Whatever the final decision, it is the strong recommendation of the team that the Regional Telecommunications Center heavily involve an institution of higher education and the formal educational structure of the country in which the Center is located.

VI. COST ESTIMATES

The estimates below are very rough. Better estimates must await a definitive design study. All figures are in U.S. dollars.

Design and Development Survey		$ 50,000
Training		$ 115,000 per year
Professional Staff (Faculty) Supporting Staff Maintenance, Operations, Teaching Materials, Travel, etc.		
Space Requirements: 1 radio studio 1 television studio 1 motion picture studio Master Control	18,000 square feet air-cooled	$ 200,000 for equipment

Telecine		
Video and Audio Taping		
Graphics		
Scenery and Props		
Film Processing and Editing		
Still Photo Lab		
Test Equipment		
Offices		
Storage		
Sharing of Materials		$ 65,000 per year
Staff		
Operations		
Acquisitions and Distribution		
Informational Clearing House		$ 30,000 per year
Staff		
Operations		
Distribution		
Research and Evaluation		$ 100,000 per year
Professional Staff		
Supportive Staff		
Operations		
Outside Contracts		
Professional Production Facilities		$ 800,000 per year
Professional Staff		
Supportive Staff		
Program Production		
Maintenance, etc.		
Space Requirements:	25,000 square feet mostly air-conditioned	$1,000,000 for equipment
1 radio studio		
1 TV studio (possibly 2)		
1 motion picture studio		
Master Control		
Telecine		
Video and Audio Taping		
Film Editing and Processing		
Scenery, Props		
Graphics, etc.		
Offices		
Storage		

Technical Services Consultants Supportive Staff Operations Travel, etc.	$ 100,000 per year
General and Administrative (G&A) for Center Staff Consultants Operations Planning	$ 100,000 per year
Instructional Television Demonstration Project (See V. above)	$350,000 capital and $50,000 per year
National Pilot Projects Matching Assistance Funds for 6 projects at $250,000 each	$1,500,000 capital

VII. IMPLEMENTATION RECOMMENDATION

If the decision of the Ministers of Education is to proceed as recommended with activation of the Southeast Asia Regional Telecommunications Center, the following project implementation factors are submitted for serious consideration:

1. As soon as possible after the Ministers' decision, a depth on-site survey should be conducted to develop the definitive project design. The assignment of the team preparing this report was that of determining the feasibility of the concept of regional cooperation in radio-television. Time permitted only elemental consideration of actual operation of the project. As a logical next step, specialists should tour all participating countries without the pressure of time deadlines to develop detailed administrative, educational, technical, fiscal and

other operational plans relative to activation of the service project. A blueprint should be developed which lays out for final approval the specifics of responsibilities and commitments of SEAMES, participating assistance organizations and each member nation.

Television, in particular, is a complex medium. A number of elements must be included if television is to serve the formal educational process and maximum results are to be achieved. Care must be taken to incorporate into the basic design certain safeguards which will insure successful employment of the educational media and most productive benefits.

2. The team urges as strongly as possible that SEAMES and each participating nation recognize from the outset the advantages to be obtained through integrating radio and television instruction as basic elements of the broader educational structure, rather than seeing them used only peripherally. Further, it is imperative that radio and television utilization join audio-visual instruction in the curricula of teacher training institutions and that comprehensive in-service utilization programs be initiated. The extensive educational television program in American Samoa is well worth study in this regard. Here, the curriculum was fundamentally revised to build upon quality televised instruction. Pilot projects in the various SEAMES countries also should take this curriculum modification into account as planning is begun. It would be well for the design and development team, together with a key specialist from each of the participating countries, to spend a few days in Samoa conducting first-hand observation and evaluation.

3. A conference should be called, or some other investigatory procedure initiated, to determine which SEAMES nations will participate; which assistance organizations and foundations will contribute; on which bases commitments will be made; the formula for participation and funding; and the timetable for development.

4. The team strongly recommends that from the outset SEAMES undertake to coordinate and integrate the telecommunications project wherever appropriate with all other SEAMES projects, (i.e. The Manpower and Educational Planning Project), with all extant and planned regional projects of individual assistance organizations, and with individual projects unilaterally developed by a SEAMES member nation and assistance agencies. The total job to be accomplished is massive; needs are great and financing will always be limited. Every effort should be made to reduce to the point of elimination, needless duplication of effort and expenditure. With this in mind, it is recommended that SEAMES include as members of the design and development team:

- specialists from SEAMES countries
- representation from UNESCO
- representation from the Asian Broadcasting Union
- representation from the Association for Southeast Asia
- representation from participating assistance organizations and foundations.

Because the potential for improvement is so great, many agencies and organizations are talking of the possibilities of the use of radio and television within individual countries, and of the possibilities of regional use of the broadcasting media. These interests should be coordinated and consolidated.

The recently completed Bangkok UNESCO conference recommended a scope and feasibility survey leading to a regional training institute for broadcasting. UNESCO has certain training and other programs currently operative within the region. Every effort should be made to see that the UNESCO activities are coordinated with the SEAMES project wherever possible. Further, it is reported that the Asian Broadcasting Union is considering Kuala Lumpur as a location for an Asian broadcast training center. This group represents a major pool of professional experience which should be tapped. It has been reported that the Association for Southeast Asia is considering some type of cooperative educational materials development for Thailand, Malaysia and the Philippines. It may be that the aims and objectives of these several organizations are incompatible with complete consolidation and that several specialized centers will evolve.

The Center for Educational Television Overseas, because of its wealth of experience and capable professional staff, might very appropriately be involved in the proposed on-site definitive survey. At the very least CETO should be called in to advise on the training aspects.

It cannot be stressed too much that careful coordination of these several organizations must ensue for the most effective development of regional cooperation in Southeast Asia - in the radio and television field.

5. The radio-television team was privileged during several points of its investigation to hold discussions with the English Language Team. From these talks came an excellent illustration of the benefits which can accrue through cooperative development of several SEAMES projects. There is every indication that a regional English language program could be coordinated with the regional telecommunications project to the advantage of both. For example, quality visual materials, and accompanying printed materials, could be prepared at the regional production center for distribution to each country. Here, the pilot radio-television project could add sound tracks and incorporate the recorded materials into locally produced English language programs. Further, the individual country might emulate a very successful technique currently employed in Thai broadcasting. A Thai language sound track is aired over the television station together with the visual information. Simultaneously, the original English sound track is broadcast over one of the radio stations. Students are thus able to make use of both sound broadcasts to reinforce the learning experience. This technique should be subjected to additional study. If radio and television can contribute substantially to improved competence in English among the nations of Southeast Asia, the whole regional educational radio and television project will have been eminently worthwhile.

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IX. ACKNOWLEDGEMENT

With deep appreciation, the undersigned members of the Radio-Television Feasibility Team wish to acknowledge the assistance of SEAMES staff and the governmental officials, education officers and broadcasting specialists of each of the countries visited. Their efficiency of scheduling enabled the preparers of this report to meet with many people and inspect a variety of facilities in a very brief period. Their frankness in discussing problems and potentials enabled these discussions to be productive and perspectives to be clearly focused. Their friendliness and hospitality made the assignment a most pleasant and one which will long be remembered after return to the States. Additional information or elaboration of any aspect of the above report will promptly be provided upon request.

Submitted this 18th of June, 1966
Bangkok, Thailand

Arthur Hungerford
Associate Professor of Speech and
Chairman of the Major in Broadcasting
The Pennsylvania State University

Jack McBride
Director of Television and KUON-TV
and
General Manager of Nebraska
Educational Television Network.

SEAMES/TF/1.1
(Second Edition)

Report of the SEAMES

Task Force on Engineering

September 23, 1966

Bangkok, Thailand.

A. Background

On April 7, 1965 President Johnson stated:-

> "The United Nations is already actively engaged in development in this area. (Southeast Asia). I would hope that the Secretary-General of the United Nations could use the prestige of his great office — and his deep knowledge of Asia — to initiate, as soon as possible, with the countries of the area, a plan for cooperation in increased development.
>
> For our part, I will ask the Congress (of USA) to join in a billion dollar American investment in this effort when it is underway."*

and:-

> "I will very shortly name a special team of patriotic and distinguished Americans to inaugurate our participation in these programs. This team will be headed by Mr. Eugene Black, the very able former President of the World Bank."

Mr. Black and his team met** with the Ministers of Education of Southeast Asia in Bangkok on November 30, 1965. He discussed the crucial role education plays in regional development and requested the governments of Southeast Asia to make imaginative recommendations concerning the undertaking of projects aimed at significant improvements in education. He placed great emphasis upon the importance of the regional character of proposals submitted.

The Ministers of Education present responded with numerous ideas. The need for a mechanism to continue serious consideration of this matter was expressed. As a result SEAMES (The Southeast Asia Ministers of Education Secretariat) was created.

In a Discussion Paper,*** SEAMES briefly described the projects suggested at the Black Meeting of November 30, 1965, raised certain questions, and requested the member countries of SEAMES to comment in writing.

A technical workshop was held in Kuala Lumpur between July 26-30, 1966, (cf.Bibliography IV). In that report it was recommended that a Task Force be set up to examine the proposal to establish a Regional Institute of Technology.

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*See Bibliography I
**See Bibliography II
***See Bibliography III

B. The SEAMES Task Force on Engineering

As a result of the above events SEAMES set up a Task Force on Engineering requesting each member country to send a representative. The Task Force met in Bangkok September 19-23, 1966. The Philippines* and Laos did not send delegates. The list of task force members is appended.

The terms of reference for the Task Force are stated in the Background Paper (Bibliography V) and are reproduced below:-

"a) To review the proposed plan, charter and organizational structure of the proposed Asian Institute of Technology; and to assess the principles which provide common ground and objectives for the SEAMES.

b) To review the feasibility of establishing a Southeast Asian Institute of Technology with branches in the region, as distinct from the proposed Asian Institute of Technology which covers a wider region.

c) To review with the appropriate officers of the proposed Asian Institute of Technology the legal and organizational steps necessary for association between the above two Institutes.

d) In accordance with the foregoing, to prepare recommendations for decision by the Ministers of Education of Southeast Asia during their forthcoming meeting."

C. Engineering - Southeast Asia

The improvement of the standard of living in Southeast Asia, as elsewhere in the world, depends on many factors. One of the most important of these factors is the ability to undertake major engineering developments including:-

a) The development of transportation systems.
b) The development of power sources and distribution systems.
c) The development of communications systems.
d) The development of natural resources.
e) The development and control of water resources.
f) The development of sanitation systems.
g) The development of industrial enterprises of a wide variety.

Educated leaders of engineering are urgently needed to provide the direction, energy and competence for such undertakings. Thus the means for high quality engineering education at both the graduate and undergraduate levels must be provided.

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* The Philippine representative, owing to unforseen difficulties, arrived in Bangkok after the main body of the Task Force Report had been concluded. His Addendum to the Report of the Task Force is attached herewith. (SEAMES/1.1.add.1)

In this report the Task Force on Engineering discusses this problem and makes certain recommendations for immediate action. At its first meeting the Director of SEAMES briefed the Task Force on its function and the guidelines along which it should work.

D. Graduate Education in Engineering

Graduate education in engineering is becoming increasingly more important to the development of a nation and a region. Project leadership of sophisticated and large undertakings requires such training. A key element in the improvement of undergraduate education is an increasing number of professors who have been educated at the graduate level. Southeast Asia has essentially no graduate schools of engineering. Some of its people secure graduate education in Europe and the United States. However there is need for graduate work in engineering in Southeast Asia. The beginning of such an institute - The SEATO Graduate School of Engineering - exists in Bangkok. Hence the Task Force met with Dean Milton E. Bender Jr. of that school to learn about its present operation and plans for its development into the proposed Asian Institute of Technology.

E. The Asian Institute of Technology

a) History of SEATO Graduate School of Engineering.

The SEATO Graduate School of Engineering was conceived by the SEATO's first Secretary-General, H.E. Mr. Pote Sarasin at its Council Meeting in Manila in 1958 with the idea to respond to an increasing need for highly-trained engineers in the Southeast Asian region. The School, established by a Royal Decree of the Thai Government in July 1959 officially opened in Bangkok, Thailand, on September 8 of the same year. The Decree provided for the operation of the School by a Board of Management composed of representatives of the SEATO members countries, for liaison with Chulalongkorn University and invested with full powers to manage the affairs of the School.

The first Interim Board was set up to work toward the establishing of the School. An intensive study was made with technical assistance provided by Thailand and the United States through Chulalongkorn and Colorado State Universities. Buildings were planned and constructed by Thailand and the selection of a faculty was begun.

On September 8, 1959, SEATO Day, the School officially opened with 19 students from Pakistan, the Philippines, and Thailand in one major field offered - Hydraulic Engineering, and in the following years, four other majors - Public Health, Transportation, Structural, and Soil Engineering have been added. The enrollment has climbed to 110 students in the year 1966. In the past seven years of its operation the School has granted the Master of Engineering degree to 150 students from India, Malaysia, Nationalist China, Pakistan, the Philippines, Vietnam, and Thailand.

The School is supported in some way by every SEATO member country. Thailand, through Chulalongkorn University, has contributed the land and buildings, professors, service staff members, operating funds and equipment. The United States, through Colorado State University, has made available a majority of the teaching staff, together with substantial funds for operating expenses and equipment purchases. The United Kingdom has contributed most of the equipment, several faculty members, staff and operating funds. Other countries have contributed faculty members, funds for scholarships, books and equipment.

In 1964 an Expert Study Group was established, composed of leading engineering educators from member countries, to study and recommend steps to be taken for the future of the SEATO Graduate School of Engineering. Following the Study Group's report in December 1964 a Commission, composed of representatives from each member country, was established to submit a report and draft a Charter for the transition of the School to independent status.

The SEATO Council at its March 1966 meeting in Canberra took the necessary steps to phase out control of the SEATO Graduate School of Engineering and permit its establishment as an independent institution to be called the "Asian Institute of Technology".

b) Status of Asian Institute of Technology

Steps to initiate the Asian Institute of Technology are now well underway. A charter has been drafted (see Bibliography VII). It will shortly be enacted into Thai law.

The charter provides for an independent non-profit institution located in Bangkok under the control of an International Board of Trustees. Its purpose is to engage in graduate activities - instruction, study and research on a regional basis.

The Asian Institute of Technology is being created using the assets of the established SEATO Graduate School of Engineering. The process for this transfer, now underway, is essentially as follows:

An interim board consisting of members appointed by SEATO member countries will meet in Bangkok on about October 24, 1966. It will transact such business and approve appropriate plans for the founding of the Asian Institute of Technology and the transfer of all assets from the SEATO Graduate School of Engineering to the new Institute. Such actions will be effective on the date that the charter is enacted into Thai law (about January 15, 1967).

At this time a permanent board will assume responsibility for the affairs of the Asian Institute of Technology. It is expected that the permanent board will have membership consisting of the members of the interim board plus additional members. It is expected that all SEAMES nations will be asked to nominate members.

Thus the Asian Institute of Technology will not be starting from scratch. It will have as a base an existing graduate school which while very young has earned considerable distinction. It has an able faculty, a student body, and administration of proven ability. These facts will be of the utmost importance in the major fund raising which the Asian Institute of Technology must carry on.

Therefore, the Task Force believes that SEAMES should not undertake to establish a Regional Institute of Technology as distinct from the Asian Institute of Technology since the proposed facilities for that institute would meet the foreseeable needs for regional graduate studies in engineering. Moreover, a Regional Institution of Technology serving only the SEAMES and adjacent countries would be too limited in scope to enable it to develop to an institution of outstanding international character.

The plans for the development of AIT are attached in Bibliography VIII. Briefly the plans call for:-

1) A site of some 400 acres in Bangkok.

2) Facilities to begin using that site will be ready in 1972.

3) The present site of the SEATO Graduate School of Engineering will be used until then.

4) Enrollment projections are:-

1966	110 (actual)
1971	200
1976	400
1981	800
1986	1200

5) A student faculty ratio of 6:1.

6) A capital cost by 1986 of approximately $35,000,000 and an annual operating budget at that time of about $10,000,000.

7) Continue existing civil engineering programs and add additional ones as the needs of the region require.

Because of lack of data the Task Force was not able to evaluate numerically the required size - time development of the Asian Institute of Technology to meet the needs of the region. However, it believes the Board of Trustees must be constantly alert to such needs and adjust the growth of the Institute accordingly. It does believe that the ten year projections are reasonable.

The question of the possible development of branch units of the Institute at various locations was raised. The Task Force believes that this is not presently feasible. The very limited resources which can be made available for graduate education make concentration of activities at a single location not only desirable but necessary.

It is clear that a great graduate center for engineering education in Southeast Asia would be an important asset for the region as a whole and for assisting the growth in size and quality of the respective national institutions of higher learning. Certain desirable and much needed functions which it could serve are listed below.

1) Provide outstanding library services in engineering for the region. To this end the library should be planned to provide rapidly to institutions of the region copies of technical reference material as requested. The library should be planned so that it may take the fullest advantage of computor search methods as they develop. It must be a truly regional library providing as rapidly as possible a rich resource of reference material readily available to the educational institutions of the area.

2) Eventually it should plan to operate a large scale digital computor, perhaps on a time sharing basis, with input stations at each college in the region which has a demonstrable need for such service.

3) To coordinate and distribute information concerning research work being undertaken anywhere in the region.

4) To educate men for teaching in the engineering institutions of the area.

5) To sponsor meetings and other activities which will promote active interchange of ideas and information between the engineers of the region.

6) To provide assistance to national universities in the development of new programs and the improvement of existing programs.

7) To provide an interchange of professors and students between the institutions of the region.
See also Bibliography VIII & IX.

One would hope that the Asian Institute of Technology would become a recognized great international institution in a very short time. As such it will have a major influence upon the other universities of the region. The first Board of Trustees will exert great influence on the determination of the nature and scope of the Institute's activities. Therefore, it is vitally important that the nations of the region seek to have very able men broadly interested in the region as a whole to be members of the initial board.

F. Undergraduate Studies

The Asian Institute of Technology will be a graduate school of engineering, training students who have completed their undergraduate work in their own national universities. For its continued success and development to an institution of world standing, the Asian Institute of Technology must have a large pool of graduates of high calibre from which to select its students. The experience of the SEATO Graduate School of Engineering has indicated that the undergraduate training in this region is not of a uniformly high standard with the consequence that the faculty has to repeat material which should have been covered in a good undergraduate school.

In view of the above, greater attention should be given to increasing, and above all, improving the quality of first degree graduates in this region.

At present, besides the Philippines, there are only 6 undergraduate schools of engineering in Southeast Asia and the overall engineer - to-population ratio is 1:10,000 (See Bibliography VI). This ratio of 1:10,000 in a region attempting to industrialize on a large scale and at an accelerated rate compares very unfavorably with the ratio of 1:400 in more developed countries.

The Asian Institute of Technology as envisaged could help to alleviate this acute shortage by supplying trained personnel for the undergraduate schools and the industries. However, the regional industries, at this stage of development, require a greater number of undergraduate educated personnel who are to be absorbed directly into their operations. Furthermore, in order to obtain maximization of human effort and resources there must be an adequate supply of supporting staff to assist the highly trained personnel who should be relieved of much routine work.

It is realized that it may not be possible to improve and increase undergraduate training as a purely regional endeavour. However, it is evident that the region as a whole requires aid on a large scale.

The Task Force therefore recommends the setting up of a fund of substantial size for the purpose of aiding undergraduate studies development.

One way in which this fund may be used could be in the form of loans, grants or supplies of equipment and faculty to worthwhile projects.

To improve undergraduate teaching, the staff of national universities should undertake research which in some cases the universities cannot afford. Financial assistance to support this kind of research could some out of such a fund. This fund could also be used to foster regional understanding and co-operation by providing support for faculty and student exchange within the region.

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RECOMMENDATIONS
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1. The establishment of a regional institute of technology is well underway - The Asian Institute of Technology.

   Therefore, the Task Force on Engineering recommends that SEAMES members do not undertake to establish a Regional Institute of Technology as distinct from the Asian Institute of Technology.

2. SEAMES members will be asked to nominate candidates for membership on the Board of Trustees of the Asian Institute of Technology. This Board will exert great influence on the determination of the nature and scope of the Institute's activities.

   Therefore, the Task Force recommends that member nations of SEAMES become active participants in the Asian Institute of Technology and seek to have very able men broadly interested in the region serve as members of the Board of Trustees of the Asian Institute of Technology.

3. Strong undergraduate education in engineering is fundamental to the growth and development of Southeast Asia.

   Therefore, the Task Force recommends that a fund of substantial magnitude, perhaps of the order of $10 million extended over three to five years, be established for the support of meritous proposals for the improvement of undergraduate engineering education in Southeast Asia.

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ACKNOWLEDGEMENT

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The members of the Task Force wish to express their appreciation to the officials of the SEAMES, the SEATO Graduate School of Engineering, and USOM for the assistance rendered to the Task Force.

They would especially like to thank Dr. John A. Hrones of the Case Institute of Technology for his experienced counsel and assistance to the Task Force.

Last but not least, they wish to thank the host country for the kind hospitality extended.

-oooOOOooo-

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b) Southeast Asian Member Countries' Written Comments on the Discussion Paper SEAMES/011.08 - SEAMES/011.09

c) Additional Southeast Asian Member countries' Written Comments on the Discussion Paper SEAMES/011.08 - SEAMES/011.09 add.1

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X SEATO Graduate School of Engineering - Graduates - Enrollment Record-Applicant Record - Professional Staff - Publications

XI Singapore's Additional Proposal - SEAMES/041.01/D1 add.3

XII Malaysia's Additional Proposal on Engineering - SEAMES Technical Workshop July 26-30, 1966 - SEAMES/041.01/D1 add.7

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* Most of the documents listed above have already been distributed on a number of occasions. The Secretariat considers it appropriate not to reproduce them as appendices to the Task Force Report. Complete sets of the above documents are available at the Secretariat.

Engineering

1. List of Representatives of the SEAMES

Task Force on Engineering from Six Member Countries

Country	Name	Title of Post	Office Address
Laos	Not to send any representatives		
Malaysia	Mr. Ong Hean Tat	Senior Organiser, (Technical Education) Ministry of Education Kuala Lumpur	Ministry of Education Kuala Lumpur
Philippines	Prof. Edgardo Pacheco	Professor of Engineering Mechanics, University of the Philippines	University of the Philippines
Singapore	Mr. Lau Jark Chong	Senior Lecturer in Mechanical Engineering, Singapore Polytechnic	Singapore Polytechnic, Singapore
Thailand	Prof. Aroon Sorathesn	Associate Dean, SEATO Graduate School of Engineering	SEATO Graduate School of Engineering, Henri Dunont St. Bangkok
Vietnam	Mr. Nguyen Tu Duc	Assistant Director Technical Center	Technical Center Saigon

2. List of the Consultant of the SEAMES Task Force from Organization

Organization	Name	Title of Post	Office Address
USAID	Dr. John Anthony Hrones	Provost	Case Institute of Technology, Cleveland, Ohio 44106

SEAMES/TF/1.1 add 1

Bangkok, Thailand

October 7, 1966

Dr. Kaw Swasdi Panich
SEAMES Director
Bangkok, Thailand.

Dear Sir:

I have the honor to submit herewith the attached addendum to the report of the SEAMES Task Force on Engineering.

The rather tight scheduling and other unavoidable circumstances kept me from arriving in time to join the other members of the Task Force.

Although the work of the Task Force had already ended, you very kindly renewed your invitation for me to come to study proposed plans and express my own thoughts on them.

For this, I am deeply grateful.

Very truly yours,

E S Pacheco
EDGARDO S. PACHECO

Member, Task Force on
Engineering.

SEAMES/TP/1.1 add 1

Bangkok, Thailand

October 7, 1966

Dr. Kaw Swasdi Panich
SEAMES Director
Bangkok, Thailand.

Dear Sir:

I have the honor to submit herewith the attached addendum to the report of the SEAMES Task Force on Engineering.

The rather tight scheduling and other unavoidable circumstances kept me from arriving in time to join the other members of the Task Force.

Although the work of the Task Force had already ended, you very kindly renewed your invitation for me to come to study proposed plans and express my own thoughts on them.

For this, I am deeply grateful.

Very truly yours,

E S Pacheco
EDGARDO S. PACHECO

Member, Task Force on
Engineering.

ADDENDUM TO THE REPORT OF THE SEAMES TASK FORCE ON ENGINEERING

The main body of the Task Force on Engineering submitted a report whose substance and spirit reflect to a large extent the feeling of this writer. This addendum is therefore intended to serve, not as an independent report, but as a modest supplement to the splendid collective contributions of my colleagues on the Task Force.

IDENTIFICATION OF THE PROBLEM

The First Ministerial Conference held in November, 1965, identified a need for considerable expansion in the supply of high-level and middle-level technological manpower and there was then recognized a need for regional action in this direction.

Each country in the region is exerting a continuing effort to generate the manpower necessary to stimulate and sustain industrial and economic growth. However, present facilities need to be supplemented and the possibility of working out solutions along the lines of regional cooperation has to be explored.

In brief, therefore, the problem consists of two parts, namely:

1. How to accelerate development of high-level technological manpower, and,
2. How to accelerate development of middle-level technological manpower.

POSSIBLE SOLUTIONS

The assignment given to the Task Force on Engineering is confined to the consideration of a solution by way of the establishment of a regional institute of technology. Several schemes are possible and the following were brought out during the First Ministerial Conference and during the Technical Workshop held in Kuala Lumpur in July, 1966.

A. Establishment of an entirely new Center of Graduate Engineering Education which shall have its own campus and physical facilities, faculty, and programs.

B. Improvement of existing engineering programs in a selected school.

C. Establishment of a regional institute comprising two or more schools of technology in different countries.

Inclusion in this report of an analysis of each of the above schemes is perhaps necessary since the proponents of the schemes could very well be looking forward to the Task Force for a report on the feasibility of each of them.

So as not to digress from the ground-work already laid down during the previous Conference and Workshop on the subject, only the three schemes enumerated above will be considered in this addendum.

ANALYSIS OF PROPOSED SCHEMES

SCHEME A:

The proposed Asian Institute of Technology which now operates on a smaller scale as the SEATO Graduate School of Engineering falls along the lines of this scheme.

The nature of the Institute as envisioned to be established requires a high concentration of activity in the campus where the school is to be situated with off-campus undertakings taking a subsidiary role.

This arrangement assures close collaboration among the faculty members and staff of the institute since they will be based in just one area. There will be no problem about variations in the level of courses and programs which would otherwise be present if curricular offerings were given in different campuses.

As far as the academic phase of the operation is concerned, the institute will function just like most of the graduate schools in different parts of the world. It therefore has the advantage of having available to it tried and tested procedures which should not be difficult to adapt to meet the requirements of the school.

Classes in the Asian Institute of Technology will be conducted in English. Unless planned, positive steps are taken to overcome language difficulties, the benefits the school can offer will take the natural course of flowing in the direction of countries whose students already have more than just a passing familiarity with the language. Unless remedied, this can pose an obstacle to all out cooperation on a regional scale.

The enrollment in this Institute will very likely be characterized by a predominance of students coming from the host country. The enrollment figures of the SEATO Graduate School of Engineering shows that, from the time this regional school was established in 1959, it enrolled a total of 186 Thai students as against 166 non-Thai students coming from six other countries in the region. It has to be recognized that the additional problems present in supporting and encouraging enrollment of students from outside the country where the Institute is located will cause the population of the school to be predominantly local.

The proposed Asian Institute of Technology will be concerned primarily with graduate level technical education. It can help meet the needs for high-level technical manpower in the region. It has, however, little provision if any for offering direct and immediate assistance to countries whose more pressing need is technical manpower at lower levels. As far as the problem identified earlier is concerned, this leaves us still searching for a solution to our middle-level manpower problem.

SCHEME B:

This plan calls for the utilization and expansion of the faculty, physical facilities, and programs of an existing institution (other than the SEATO Graduate School of Engineering).

It is perhaps reasonable to assume that the institution so chosen will retain its independence in the design of courses and curricula, selection of staff, and such other prerogatives which the charter of the institution allows only the institution to exercise. While it might be receptive to suggestions coming from a regional body like the SEAMES or some other organization, the latter cannot expect as much elbow room in the implementation of its aims and objectives as in Scheme A.

Compared to Scheme A, this will entail lesser financing since much of the resources already available in the school can be utilized in meeting the needs of a regional technological institute.

This seems to be as far as the differences between A and B go. Otherwise, the regional institute founded on this concept will posses the same advantages and disadvantages discussed earlier in connection with Scheme A.

SCHEME C:

The areas of operation under this scheme will be distributed among several countries in the region. A certain imbalance in the distribution by nationality of student population will still be present within each "satellite" institution. However, there will be a more satisfactory distribution of student enrollment when the enrollments in all the institutes involved are taken collectively.

If it is assumed that existing institutions of technological education will form the components of the regional institute, there will necessarily be a great saving in expense as compared to Scheme A.

Strictly speaking, what will come about under this arrangement is not a regional institute of technology. Rather, it will be an organizational structure with coordinating functions.

There are numerous benefits that can be derived in an organization like this. It can serve as an agency for disseminating information on technical education, according courses and curricula, organizing regional seminars and conferences, arranging inter-institute graduate and under-graduate programs, arranging inter-institute research, exchange of use of facilities, and exchange of professors.

More importantly, this organization can offer assistance in the development of high-level and/or middle-level manpower, whichever is needed by the country concerned.

This organization will find it extremely difficult if not impossible to frame courses and curricula and have them taught in the component institutions. It is doubtful if these institutions will relinquish these prerogatives. Under the circumstances, there is little hope of successfully enforcing one set of academic standards.

This scheme, while having its merits, does not have as much potential as Scheme A for development as a first-class center of graduate level engineering education.

RECOMMENDATIONS:

Bearing in mind the problem at hand which is the development of high-level and middle-level technological manpower, a satisfactory solution can perhaps be obtained by supporting the establishment of the Asian Institute of Technology.

The institute as envisioned in its Draft Charter will be primarily concerned with conducting in one locality an institute of technology specializing in graduate education. To meet the middle level manpower needs of the region, there need be added to this a co-equal function which is, to act as a central organization for directly assisting other technological institutions in the region that deserve assistance.

It is recognized that inclusion of this function will put added strain to whatever financial resources become available to AIT. But the middle-level manpower problem is there and it is a problem that can not be ignored.

It was pointed out earlier that the built-in advantages of proximity to the Institute will cause an imbalance of enrollment favorable to the people closest to the school.

This can not be helped, what can the school authorities do if it has space for say 400 students, with 200 qualified local applicants and only 200 qualified people applying from all the other countries in the region? This is the situation that exists in the SEATO Graduate School of Engineering through no fault of the school administrators.

Inclusion of the additional function is perhaps just the means that is needed to balance out in other activities whatever imblance may exist in the enrollment and staffing of the Institute.

Since AIT is intended as a collective Asian effort in the solution of Asian problems, there must be deliberate efforts to give as extensive an involvement to Asian scholars as is possible in every sphere of its activity.

The proposed additional function of AID can cover the following areas encompassing all levels of technological education:

1. Visiting professors for engineering or technician training programs, whichever the requesting institution needs.
2. Award of scholarships and research grants where the studies need not necessarily be conducted at AIT itself.
3. Financial and technical assistance in the acquisition and development of equipment, library and other instructional materials.
4. Assistance in effecting faculty exchange where the institutions involved need not always include AIT.
5. Accreditation of courses and curricula and assistance in developing the same.

The possibility of locating the Institute in an area with a moderate climate like Chieng Mai for example, should perhaps be explored.

SUMMARY

To help develop high-level and middle-level technological manpower for the region, it is suggested that the SEAMES lend its support to the Asian Institute of Technology which will very likely come into being soon.

As proposed to be organized, however, the Asian Institute of Technology will be developing high-level manpower and only indirectly meet Middle-Level Manpower needs.

A revision of ARTICLE II (Purposes) of the Draft Charter of the Asian Institute of Technology is necessary so that, in addition to conducting graduate level instructions at the Institute, there will be included and emphasized a co-equal function of the Institute which is to provide assistance to other institutions for technological education in the region.

Every opportunity must be given in this Institute for the expression of Asian excellence by Asian Scholars.

****

SRAMES/TF/2.1

SOUTHEAST ASIAN MINISTERS OF EDUCATION SECRETARIAT

TASK FORCE ON TROPICAL MEDICINE

To: The Director
SEAMES

Dear Dr. Kaw Swasdi Panich:

We present to you the Report and Recommendation of the Task Force on Tropical Medicine, consisting of

1. Report and Recommendations
2. Fact-Finding Reports of tours in

    Thailand
    Malaysia
    The Philippines
    South Vietnam

3. Annexures

We are grateful to you for the opportunity you have given us to study this most important problem.

We would also wish through you to extend our thanks to the USAID for making the tour possible and to the various host countries for their many kindness.

Thank you,

Yours sincerely,

(Signed) Omar Ahmad

Director, Institute for Medical
Research, Kuala Lumpur, Malaysia

(Signed) J. Paguyo

Superintendent of Medical
Schools, Manila, Philippines

(Signed) Chamlong Harinasuta

Dean, Faculty of Tropical
Medicine, Bangkok, Thailand

(Signed) Nguyen Huu

Professor of Anatomy, Saigon
South Vietnam

(Signed) Nguyen Van Si

Director, Pasteur Institutes,
Saigon, South Vietnam

SOUTHEAST ASIAN MINISTERS OF EDUCATION SECRETARIAT

TASK FORCE ON TROPICAL MEDICINE

Introduction

1. The SEAMES Technical Workshop meeting on the project proposal for the "Development of a Regional Centre for Tropical Medicine" was held at Kuala Lumpur between 26th-30th July 1966. It discussed the "Summary Report which was prepared by Dr. Alice Palmer, Dr. David Mckenzie and Dr. Charles Sprague (SEAMEB/041.02/FI).

The Technical Workshop meeting found that the SEAMES/041.02/FI Summary report did not give adequate information on the Situation of the State of tropical medicine in the member countries. In the plenary session at Kuala Lumpur the Technical Workshop meeting recommended in its final report (Section RG/2/1) that:-

".....further investigation into the existing facilities in the member countries would be required......." (RG/2/1); and ".....recommends that a team representing the participating countries be constituted and it could join the proposed task force (of international experts) as mentioned in the Palmer Report....." (RG/2/1).

2. In accordance with the abovementioned report, the SEAMES in Bangkok mounted a Task Force consisting of the following representatives of the member countries and international consultants:

Representative of Thailand	....	Professor Chamlong Harinasuta Dean Faculty of Tropical Medicine Bangkok.
Representative of Malaysia	....	Dr. Ungku Omar Ahmad Director, Institute for Medical Research Kuala Lumpur.
Representative of Philippines	....	Dr. Julian Paguyo Superintendent of Medical Schools Manila
Representative of South Viet Nam	....	Professor Nguyen Huu Departments of Anatomy and Surgery Saigon
	....	Emeritus Professor Nguen-Van-Ai Director General of the Pasteur Institute, Viet Nam

with three consultants:

Dr. J.S. Willington, Associate Dean, University of California School of Medicine, San Francisco.

Col. W.D. Tigertt, Director, Walter Reed Army Institute of Research, Washington.

Prof. B.G. Maegraith, Dean, Liverpool School of Tropical Medicine.

3. The first meeting with the Director of SEAMES was held in Bangkok in the Ministry of Education on 9/9/66. Present were: Dr. Kaw Swasdipanij, Director, SEAMES, Prof. Chamlong Harinasuta, Dr. Willington, Prof. Maegraith, Prof. Swasdi Skulthai.

4. The Task Force held its first full working party in Kuala Lumpur; the second was held in Saigon and subsequent meetings in Bangkok.

5. The Task Force agreed to work in two phases:

Phase I: A fact finding tour of the 4 relevant countries Thailand, Malaysia, Philippines and Vietnam.

Phase II: The production of a Report and Recommendations based on the results of the fact finding.

Summaries of the fact-finding tours in each country have been prepared by the delegates and are appended.

The Report and Recommendations are enclosed.

6. Itinerary:

September	9 - 14	Thailand
	14 - 17	The Republic of the Philippines
	18 - 22	Malaysia
	23 - 26	South Vietnam
	27 - 30	Thailand.

Details of itinerary within individual countries are given in detail in the relevant fact finding reports.

7. The Task Force completed its mission on 30 September when it submitted the Report to the Director, SEAMES.

REPORT AND RECOMMENDATIONS

I. As a working basis, the Terms of Reference for the Task Force were those quoted in SE Asian Ministers of Education Secretariat Background Paper on the SEAMES Task Force on Tropical Medicine (SEAMES/TF/2) as follows:-

The Terms of Reference
for the
SEAMES Task Force on Tropical Medicine

1. To make an on-the-spot observation of attitudes, interests and other possibilities in member countries;
2. To propose an organizational structure for a Regional Centre for Tropical Medicine, including a Scientific Advisory Council and the names of association of specialized institutions both within the region, and without;
3. To estimate the structure and nine of the permanent staff positions necessary for the functioning of the Regional Centre for Tropical Medicine; to draw up a schedule of office and laboratory accommodation and of equipment for the Centre; furthermore, to indicate the sources of scientific personnel;
4. To explore the facilities available for clinical research ward accommodation and patient care;
5. To prepare a budget to cover the capital cost of establishing the centre and the annual recurrent costs for the first two five-year periods of operation;
6. To indicate the magnitude and sources of financial contributions required for the capital outlay, recurrent operating costs and for exchange of professors and students.

II. Having visited the four countries, namely, Thailand, Malaysia, Philippines and South Vietnam, the Task Force considered that in the time at its disposal it had fulfilled Terms of Reference 1 and 4.

III. It was agreed that the other Terms of Reference could not be examined at this stage, since they dealt with aspects of a single Regional Centre, a concept which the Task Force wished to qualify (see below).

Discussion on Terms of Reference 1 and 4

1. "member countries"

Of the six member countries in the SEAMES group (viz Thailand, Philippine, Singapore, Laos, South Vietnam and Malaysia), only four have shown interest in this project. It is fair to say that if this project is to promote the health and welfare of the people in the region, the proposed centre should be supported by all members of SEAMES.

To translate successfully this SEAMES project continued efforts should be made to interest non-participating member countries in the venture. It may be desirable, too, in the future to invite Indonesia, Burma and Cambodia to participate on some part or all of the project.

2. "interests"

There is no doubt that every member country of this Task Force has shown keen "interest" in the project. This has been expressed by various senior officials and members of government including Ministers of Education and Ministers of Health, whom the Task Force was privileged to meet.

3. "attitude"

The Task Force noted a discernable difference in attitudes towards the proposal of a single, autonomous and comprehensive regional center. The Hon. Carlos P. Romulo, Secretary of Education of the Philippines expressed the view that the idea of a regional center for tropical medicine is good but expensive, he therefore preferred in the mentioned developing and strengthening the national organizations. He mentioned his proposal to create a Philippine Center for the Health Sciences which would integrate under one roof all medical and paramedical teaching and research.

The attitude of the Vietnamese Government was that a comprehensive regional centre at one physical spot would be preferable to setting up several satellite institutions in various member countries. The Vietnamese authorities cited the expense involved in establishing separate institutions. The representatives of Vietnam stated the intention of their Government to cooperate closely on the regional project, which was originated at the request of Vietnam.

The Minister of Health, Thailand expressed his interest in the cooperative programme and his view that the proposed regional centre would fit readily into an existing national institution such as the Faculty of Tropical Medicine, Bangkok.

The Minister of Health, Malaysia, stated that the proposed centre would need careful study and that Malaysia would cooperate fully to make the project a success in whatever form might be found appropriate.

CONCLUSIONS

1. Any one of the four participating countries would find it difficult to manage at the present time a comprehensive and autonomous regional center. The countries involved may find difficulty in committing themselves to a considerable long term financial obligation.

2. One of the most important considerations is the question of staff. The center should, to a substantial degree be staffed by Asian experts well versed in the health and disease problems of this region. At present, Asian experts in tropical medicine are few and are often primarily involved in various health projects which are vital to their own national development programs. While most of these Asian experts feel acutely the need for close collaboration and possibly integration in various research and training projects, they would find it extremely difficult to leave their national positions and take up appointments for any reasonable length of time in a regional center away from their own countries.

3. If this regional center is to be established now, a large proportion of the expert staff would have to come from outside this region. While there is no hesitation in having much needed expatriate specialists in the Region, some difficulties are envisaged if the majority of the staff of the center were outsiders. Such a pattern might create the impression that the center was not an institution principally relying on Asian co-operation and initiative.

4. Co-operation among Asians is vital to the prosperity and stability of this part of the world. Close relationship has existed for some time between Thailand and Malaysia. More recently co-operation between Thailand, the Philippines and Malaysia has been extended through ASA. South Vietnam is a welcome additional nation in this SEAMES project.

RECOMMENDATIONS

It is proposed that a South East Asian Regional Center for Tropical Medicine be established consisting of a Central Co-ordinating Board and four National Tropical Medicine Centers, one in each of the participating countries.

The Central Co-ordinating Board, should have the following functions:

1. to correlate the activities of the four National Tropical Medicine Centers.

2. to make joint approach for aid and co-operation with other national and international organizations.

3. to serve as a clearing house to catalogue, publish and translate into English information concerning the activities of this region in order to disseminate knowledge in tropical medicine to all institutions and agencies, not only in this area but also to other centers in the world.

4. to act as an agency for the exchange of scientists and students between various institutions.

5. to help organise conferences, seminars and instructional courses concerning medicine and health.

Policy of the Board

The Central Co-ordinating Board should not involve itself with nationally organised research and training activities unless it is specifically invited to do so.

Composition of the Board

The membership of the Board should consist of one representative from each of the participating countries. The Board may, if deemed necessary, appoint advisers from within or from outside the Region.

Central Office of the Board

A Central office of the Board should be set up in one of the participating countries. This office should be administered by the member from the country in which it is established. He should be designated as the Secretary General of the Board.

Meeting of the Board

Meetings should be held in rotation in member countries. The Chairman of the meeting should be the member from the host country. The venue and date of meetings should be decided by the Board. The Board in its first meeting should decide its financial policy, the establishment of a fund and the organization of its central office.

The National Tropical Medicine Center (NTMC)

Each member country will retain the responsibility of developing its own National Tropical Medicine Center, as it sees fit. The Board may be called upon for advice and help when requested.

SPECIFIC RECOMMENDATIONS

1. To initiate this project as quickly as possible, the Task Force recommends that the central office should be established in the first instance at the Faculty of Tropical Medicine, University of Medical Sciences, Bangkok, Thailand. This recommendation is made in view of the fact that a Faculty of Tropical Medicine exists in Thailand and is in close proximity to the SEAMES. Subsequent decisions with regard to the placing of the office should be made by the Board.

2. It is recommended that the Dean of the Faculty of Tropical Medicine, University of Medical Sciences, Bangkok be invited to become the first Secretary-General of the Central Co-ordinating Board.

3. It is recommended that an early meeting of the Board should be convened to plan for firm and continuing financial support of the activities of the Regional Centre. Due consideration should be given to sources of funds in the participating countries as well as to other potential sources, such as foundations, international organizations, and institutions in countries outside the area of Southeast Asia.

4. The medical problems, and the existing opportunities for clinical study and research are not identical in the countries concerned. For example schistosomiasis in the Philippines, opisthorchiasis in Thailand, plague in Vietnam, and Filariasis and scrub typhus in Malaysia represent special areas of present and potential concentration of activity. It is recommended that development and encouragement of study of these problems on a local basis be encouraged.

TROPICAL MEDICINE

1. List of Representatives of the SEAMES Task Force from four Member Countries

Country	Name	Title of Post	Office Address
Malaysia	Dr. Ungku Omar Ahmad	Director, Institute of Medical Research.	Institute of Medical Research, Kuala Lumpur.
Philippines	Dr. Julian L. Paguyo	Superintendent of Medical Schools, Bureau of Private Schools, Department of Education.	Medical Schools, Bureau of Private Schools, Department of Education, Manila.
Thailand	Dean Chamlong Harinasuta	Dean, Faculty of Tropical Medicine, University of Medical Sciences.	Faculty of Tropical Medicine University of Medical Sciences, Bangkok.
Vietnam	Dr. Nguyen Huu	Professor of Anatomy, Department of Anatomy and Surgery, Saigon.	Department of Anatomy and Surgery, Saigon.
	Dr. Nguyen Van Ai	Director of the Pasteur Institute, Vietnam.	Pasteur Institute, Saigon, Vietnam.

2. List of Consultants of the SEAMES Task Force from International Organizations

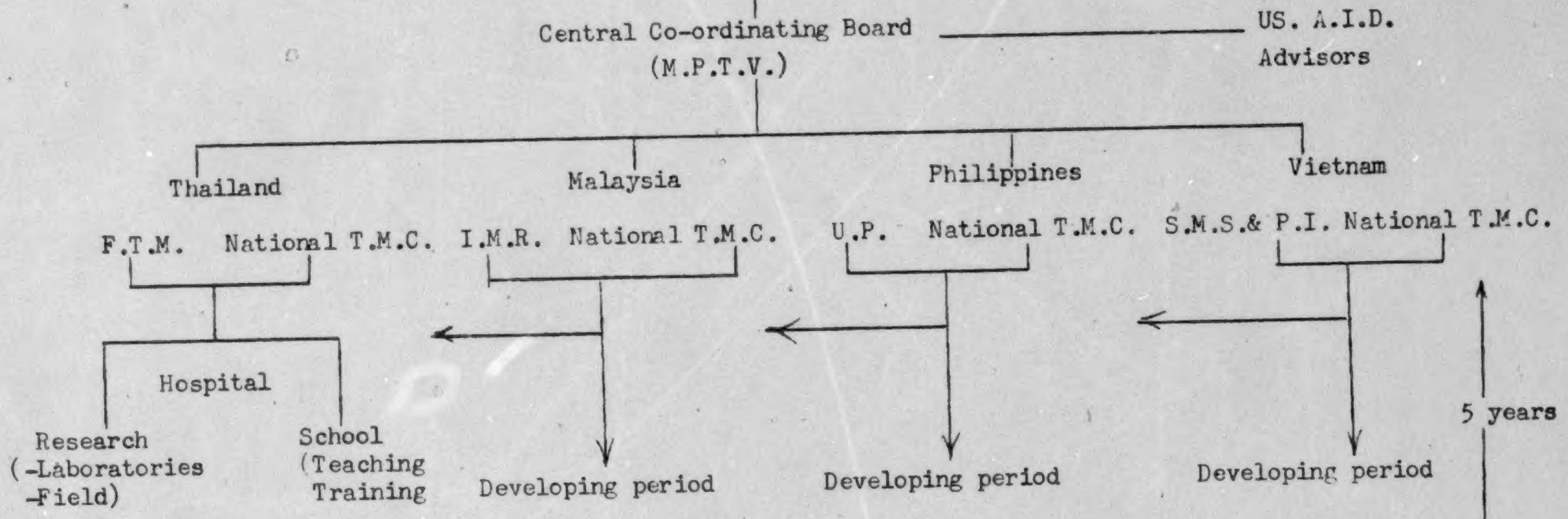
Organization	Name	Title of Post	Office Address
USAID	Dr. John S. Wellington	Associate Professor of Pathology and Associate Dean of School of Medicine	University of California, Medical Center, San Francisco, U.S.A.
VSA/AID	Prof. Brian Maegraith	Professor of Tropical Medicine, School of Tropical Medicine, Liverpool.	School of Tropical Medicine, Pembroke Place, Liverpool 3.
USAID (Walter Reed Hospital)	Dr. Wiltiam Tigertt	Professor	Walter Reed, Hospital, Washington D.C.

APPENDED

i. A suggested organizational Chart for the South East Asian Tropical Centre.

~~ii. A map of the Region~~

SOUTHEAST ASIAN REGIONAL TROPICAL MEDICINE CENTRE


Central Co-ordinating Board
(M.P.T.V.)
US. A.I.D.
Advisors
Thailand
Malaysia
Philippines
Vietnam
F.T.M.
National T.M.C.
I.M.R.
National T.M.C.
U.P.
National T.M.C.
S.M.S.& P.I.
National T.M.C.
Hospital
Research
(-Laboratories
-Field)
School
(Teaching
Training
Developing period
Developing period
Developing period
5 years

Requirement during developing period

1. Personnel
2. Space for Lab and teaching
3. Teaching facilities
4. Hospital facilities
5. Finance

M = Malaysia
P = Philippines
T = Thailand
V = Vietnam

Suggestions

T.M.C. = Tropical Medicine Centre
F.T.M. = Faculty of Tropical Medicine
I.M.R. = Institution for Medical Research
U.P. = University of Philippines
S.M.S. & P.I. = Saigon Medical School & Pasteur Institute.

THAILAND

THAILAND

1. Programme.................................... 1-3

2. Teaching of Tropical Medicine in Thailand....... 4-6

   Undergraduate; Postgraduate;
   Including D.T.M. & H.

   Teaching of Laboratory Technician and Paramedicals.

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6. SEATO Medical Research Programme................ 17-20

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Drafted By:

Prof. Chamlong Harinasuta
Dean
Faculty of Tropical Science
Bangkok, Thailand

(1)

PROGRAMME

A. First Visit to Bangkok:

9. 9. 66 i. Conference with SEAMES Director, Ministry of Education:

Director: Dr. Kaw Swasdi Panich
Secretary: Mr. Thavisakdi Srimuang
Task Force:

ii. American Embassy

Mr. Crawford.

10. 9. 66 Discussion at School of Tropical Medicine

Present: Mr. Crawford
Delegates
Consultants, including
Col. Tigertt.

Working Party at School.

11. 9. 66 Working Party.

12. 9. 66 Visit to Siriraj Hospital Medical School

Discussion on University of Medical Sciences and other teaching and research bodies, including the Faculty of Graduate Studies; Faculty of Medicine, Ramathibodi Hospital.

12. 9. 66 Visit New Library

Deputy Rector : Prof. Kasarn Chartikavanij

Dean of Faculty of Graduate Studies : Prof. Sawasdi Skulthai

Librarian : Miss Uthai Dhutiyabhodhi

Visited site of Ramathibodi Hospital and School of Medical Sciences and site of Clinical Research Centre.

Visit to SEATO Medical Research Laboratories

Director of US Army Medical Component SEATO:
Lt.Col. S. Vivona, M.C.

13. 9. 66 Visit to School of Public Health

The Department of Virology (jointly run by the School of Public Health and U.S. Army Medical Component SEATO) and the extension to the School of Public Health (in process of building).

Dean of Faculty of Public Health : Prof. Charas Yamarat

Head of Department of Prasitology : Dr. Tongchai Papasarathorn

13. 9. 66 Visit to School of Tropical Medicine and Hospital for Tropical Diseases.

Dean of the Faculty of Tropical Medicine and Professor of Protozoology : Prof. Chamlong Harinasuta

Professor & Head of Department of Tropical Medicine : Prof. Tranakchit Harinasuta.

Head of Department of Medical Entomology : Dr. Mongkol Kruatrachue

Acting Head of Department of Tropical Nutrition : Prof. Chamlong Harinasuta

Head of Department of Helminthology : Dr. Suvajra Vajrasthira

Head of Department of Tropical Hygiene : Dr. Mukda Trishnanonds

Head of Department of Radioisotopes : Dr. Kanjika Devakul

Professor & Head of Bangkok Reference Leptospirosis Lab. : Prof. Bundham Sundharagiati

Acting Head of Department of Microbiology & Immunology : Dr. Savanat Tharavanij

Visiting Lecturer in: Microbiology Dr. Phadiang Balankura

Emeritus Professor &: Consultant to US Army Component, SEATO Laboratories Prof. Svasti Daengsvang

Discussion in School of Tropical Medicine.

14. 9. 66 Fly to Philippines.

B. Second Visit to Bangkok

28.9.66 9:30 Met (1) the Prime Minister
(Field Marshal Thanom Kitikachorn)

(2) Assistant to the Prime Minister
(Phya Srivisar)

(3) Secretary-General of the Government House Secretariat
(Lt.Gen. Sawaeng Senanarong)

10:30 Met (1) Minister of Public Health
(Phra Bamras Naradura)

(2) Under-Secretary of Ministry of Public Health
(Dr. Phon Sangsingkeo)

(3) Secretary to the Minister
(Mr. Seri Vejjajiva)

11:00 Visited the National Malaria Eradication Project. Met Acting Director
(Dr. Vimol Notanonda)

11:15 Visited Department of Medical Services. Met Director-General and Deputy Director-General
(Dr. Bulsak Vadhanabhasuk)
and
(Dr. Pratuang Singkalvanij)

11:30 Visited Department of Health. Met Deputy Director-General
(Dr. Boon Suvanasara)

12:00 Visited Department of Medical Science. Met Director-General
(Prof. Chamlong Suvagondha)

Visited Virus Research Institute. Met Director
(Dr. Prakorb Toochinda)

Visited Division of Medical Research.

Visited WHO Aedes Research Unit. Met Dr. R. J. Tonn (Entomologist) and Dr. Bang.

29.9.66 10:30 Minister of Education
(M.L. Pin Malakul)

Director of SEAMES
(Dr. Kaw)

-ooo000ooo-

(2)
TEACHING OF TROPICAL MEDICINE IN THAILAND

i. Undergraduate

Tropical Medicine is regarded as a separate subject in Siriraj Hospital, but not in the other existing hospitals.

Students in Siriraj are given about 120 hours of lectures, practical instruction and ward rounds by the staff of the Division of Tropical Medicine headed by Professor Tranakchit Harinasuta. Liaison with the Faculty of Tropical Medicine is close, since Professor Tranakchit is a member of the staff of the Faculty. Other practical and theoretical instruction is given in the Departments of Pathology (including parasitology), Microbiology, Preventive Medicine and Paediatrics.

In Chulalongkorn the subject is treated as part of the routine courses in medicine and preventive medicine. Approximately the same time is given to it is in Siriraj.

Endemic communicable diseases and allied subjects are taught as part of the general medical curriculum in Chiengmai, where the preventive and community aspects are stressed more than in the other schools. Study of the diseases as seen in the field amongst the rural population is also included.

Details of the curriculum proposed for the new medical school in Bangkok (Ramathibodi) are not yet available but the impression is that the coverage of tropical medicine will be similar to that in Siriraj.

ii. Postgraduate

The 6 months course for the D.T.M.&H. (Bangkok) give by the School of Tropical Medicine is the only comprehensive one offered to graduates.

Details are given below.

Other Courses: The School of Public Health offers medical graduates a one year course leading to Master of Public Health. The curriculum for this includes endemic diseases.

The Faculty of Graduate Studies offers an M.S. in basic medical sciences, which includes parasitology and other subjects allied to tropical medicine. Courses are also given for the Diploma in Clinical Sciences and for an M.S. in clinical sciences; in these, tropical medicine might be included. So far, however, graduate degrees (M.S.) in the subjects of Tropical Medicine have been offered only within the Faculty of Tropical Medicine.

As in other subjects a Ph.D. in Tropical Medicine has not yet been offered.

D.T.M. & H. (Bangkok)

The Faculty of Tropical Medicine offers to medical graduates a 6 month course leading to the Diploma of Tropical Medicine and Hygiene (D.T.M. & H., Bangkok).

The courses start in June each year.

The first course was given in 1960; up to date 71 students have obtained the Diploma.

Students are chosen from all branches of the profession.

This year (1966) the class has only 6 members. This small number is the result of government policy forced by the present acute shortage of doctors in Thailand, which has made it very difficult to allow staff study leave.

Curriculum: The curriculum was based originally on that for the D.T.M. & H. (Liverpool) modified to provide adequate orientation towards preventive medicine and the diseases and endemic problems of Thailand. The present syllabus was designed in 1965 and differs considerably from the original, placing more emphasis on community aspects of local and world tropical problem, especially in relation to the effect of socio-economic developments such as dams, irrigation schemes and the roads opening-up by remote areas.

The subjects taught include Tropical Medicine (Lectures, hospital ward rounds and field visits) Protozoology, Helminthology, Tropical Hygiene and Entomology. Each student has to present a thesis on a subject chosen by himself with the agreement of the Dean. The theses are subsequently kept in the School library for reference.

Other subjects include tropical local aspects of dermatology, opthalmology, bacteriology, surgery and a short background course explaining the physiology of such things as acute renal and hepatic failure.

During the course general lectures are given on the research work of the School, and on the medical problems of current socio-economic developments in Thailand, including those arising from population movement and resettlement.

Details of the curriculum are appended.

TEACHING OF LABORATORY TECHNICIANS IN THAILAND

General training is given in the University of Medical Sciences by the Faculty of Medical Technology which offers a B.S. and a Diploma in Medical Technology.

The course for the Diploma takes 3 years (2 years in Faculty of Medical Sciences, 1 in Medical Technology) that for the B.S. one year longer (including 2 years in the Faculty of Medical Technology at Siriraj only).

This year there are 31 in training for the B.S. and 52 for the Diploma.

Special training is given to technicians in the various Faculties and Departments, for instance, in the School of Tropical Medicine.

There are at the moment no other centres of laboratory technical training in Thailand, but one is to be established in 1967 in Chiengmai.

TEACHING OF PARAMEDICAL PERSONNEL

The following courses are given by the Faculty of Public Health (See also Annexure B.)

Sanitary Sciences.

a. Diploma in Sanitary Science, 3 years, starting 1950-1951.

b. B.Sc. in Sanitary Science, 1 year, starting 1958-1959.

Public Health Nursing.

a. Diploma in PHN., 1 year, starting 1953-1954.

b. B.Sc. in PHN. (Supervision), 1 year, starting 1966-1967.

Health Education

B.Sc. in Health starting 1965-1966.

a. public health sciences background, 1 year.

b. education background, 2 years.

Nutrition

B.Sc. in Nutrition, starting 1966-1967

a. public health sciences background, 1 year.

b. education background, 2 years.

Students for these courses in 1965 numbered 190, this year there are 285. It is intended to increase the training capacity considerably when the new building is finished and operative.

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RESEARCH IN TROPICAL MEDICINE IN THAILAND

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i. Thai activity in this field is concentrated in the Faculty of Tropical Medicine. Details are given in the section on the School of Tropical Medicine.

ii. Joint Thai and American work is proceeding in the SEATO Medical Research Laboratories (United States Component) and in the associated Virus Laboratory (jointly with the School of Public Health). SEATO has recently sent a team to Manila to collaborate with the Philippine workers in the study of haemorrhagic fever.

Details of the work of the SEATO Laboratories are given separately.

iii. Research is in progress in various Faculties, Departments and Ministerial organizations. It has not been possible to obtain many details, since there is no central clearing house for information on past or current work, and a good many of the published papers are inaccessible to foreigners because they are written in Thai.

In the School of Public Health the joint operation with SEATO on arbovirus research is concerned at the moment largely with haemorrhagic fevers. When the new building is ready this work will be extended to include respiratory and enteroviruses. Some experimental work on a small scale is proceeding on nutrition, chiefly concerned with vitamin A deficiency and food assays, and routine studies of incidence and prevalence of some endemic communicable diseases are carried out in the teaching field station near Bangkok (Bangkoen).

The principal function of the School of Public Health is regarded as teaching rather than research.

In Siriraj Hospital studies on the clinical aspects and chemotherapy of certain endemic diseases are in progress in the Tropical Medicine Division of the Department of Medicine. Some of this work goes on jointly with the School of Tropical Medicine, since Professor Tranakchit is teaching in both hospitals.

In the Department of Paediatrics and Pathology work on the clinical and pathological aspects of haemorrhagic fever has continued for several years. In collaboration with the USA Component SEATO Medical Research Laboratories the viral agents involved have also been studied.

Some work on gastrointestinal worm infections has been carried out in the Parasitology section of the Department of Pathology, which also published the first account of schistosomiasis in a Thai person. (See under School of Tropical Medicine).

In the Physiology Department experiments are in progress on the psychological effects of a hot environment. The study of endemic goitre, using radio-iodine, has been going on for years in the Department of Radiology and in the field.

Some of the basic work on abnormal haemoglobins and erythrocyte G-6-P.D. enzyme deficiencies has been carried out over the last decade by Dr. Nanakorn and her colleagues in the Department of Haematology (Department of Medicine).

In Chulalongkorn there is a programme of work on the mechanisms of diarrhoea, particularly in regard to cholera. This has included some fundamental work on sodium and water transport across the gut membrane (also being carried out in the School of Tropical Medicine).

Details of work in Chiengmai are not available.

In general and municipal hospitals in Bangkok and in the Provinces there are islands of research work in the seas of clinical service. Again, these studies are not well recorded and are often difficult to discover. Outstanding have been the clinical and chemotherapeutic studies in Udon and Khon Kaen on opisthorchiasis and the investigation on clinical and epidemiological aspects of leptospirosis, which latter have involved all 71 Provincial hospitals and medical departments. An investigation of anaemia in some 1000 pregnant women has recently been completed in Bangkok. In the Childrens Hospital a longitudinal study of protein metabolism in kwashiorkor and marasmus is in progress in collaboration with the School of Tropical Medicine. The effect of malaria on erythropoiesis has also been recently studied.

These researches probably represent only a fraction of the current research efforts. (One of the services provided by the international organization the Task Force is considering should be to set up some central agency for the collection, processing and distribution of information on local research work in each country).

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MEDICAL SCHOOLS AND DOCTORS IN THAILAND

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.........Details in Appendix.........

1. University of Medical Sciences, Bangkok.

    Siriraj Hospital
    Chulalongkorn Hospital
    Ramathibodi (under development, associated with Faculty of Medical Sciences).

2. University of Chiengmai.

    Chiengmai Hospital.

3. Proposed Schools.

    Khon Kaen (NE)
    Songkhla (S)
    University of Chulalongkorn.

4. Student Number.

	Presenting 1966-7	First Year
Siriraj	123	152
Chulalongkorn	76	101
Chiengmai	50	50
	249	333

5. Graduates Required.

It is estimated that Thailand will need 400-450 medical graduates a year by 1970. The population at present about 30 million is increasing by about 3.2 per cent per annum.

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FACULTY OF TROPICAL MEDICINE

The Faculty is one of ten Faculties within the University of Medical Sciences. (See Annexure A)

The Faculty was officially opened by the Prime Minister on August 1960.

The School of Tropical Medicine was built on swamp land surrounding the compound of the School of Public Health.

A 4 year building programme was completed by the end of 1963 when the associated Hospital for Tropical Diseases also came into operation.

The Faculty and School building consist of an administrative and research block (336 x 4 sq.m.) an outpatient, teaching and research block (363 x 3 sq.m.) and a reference hospital, which has the capacity of 100 beds, including private rooms, and is at present operating 60. The T-shaped hospital building is designed in two parts. In front are offices, teaching accommodation (including a theatre seating 150) and research laboratories (including the Department of Radio-isotopes) (200 x 6 sq.m.).

The hospital itself consists of 3 general wards and two private blocks. (432 x 5 sq.m.).

A microbiological laboratory is to be built during 1966 on the present roof.

In addition, accommodation exists for nurses and certain staff members and there are extensive insectaries and animal houses (small animals and dogs).

Function of Faculty

Teaching: Principles of endemic (tropical) medicine, parasitology and preventive and community aspects of endemic disease states with special reference to Thailand and SE Asia.

A 6-month course is given annually for post-graduate doctors, leading to the Diploma of Tropical Medicine and Hygiene D.T.M.&H., Bangkok. The first course was given in 1960. So far 71 students have attended.

Details of syllabus etc. are given in Annexure.

Research is conducted into parasitological and certain microbiological diseases of Thailand in all aspects, in the school laboratories and in the field. Some basic research is promoted when relevant. Fact producing surveys of endemic disease are carried out and relevant biological studies are made particularly in areas of socio-economic development. The latter is in cooperation with the Division of Communicable Diseases, Ministry of Health.

Clinical Research and Care

Care of patients suffering from tropical infections, malnutrition etc. includes routine treatment of referred cases.

Research is also undertaken in various clinical aspects of tropical diseases (especially chemotherapy) in the Hospital for Tropical Diseases and in the field.

Services are offered for clinical care and for clinical pathology, radiology etc.

Summary of Research

Studies of primary interest include drug resistance in P.falciparum malaria; mechanisms of haemolysis in malaria; abnormal haemoglobin and G-6-P.D. deficiency in relation to malaria; amoebiasis specially treatment and management of liver abscess; Schistosomiasis, including S.japonicum infection in man in Thailand and cercarial dermatitis; Opisthorchiasis; Paragonimiasis; Hookworm infection in relation to iron reserves; Angiostrongylus infection and other causes of eosinophilic encephalitis; Leptospirosis, including a reference laboratory covering all 71 Provinces; Scrub typhus, including infections in animals and mites; the relation between infection and nutritional status in infants children and adults in Bangkok and in resettlement areas in NE; Anaemia in pregnancy in relation to hookworm infection and deficiencies of folic acid and B_{12}; Filariasis in all aspects medical, parasitological and entomological; studies of local mosquito vectors and disease transmission especially of filariasis; snails of Thailand concerned in disease transmission.

Details of current research programmes are given in the Annexures.

Administration

The Dean is chief administrative officer. He is assisted by senior staff member acting as Sub-Dean (administrative). Teaching is coordinated by a Sub-Dean (teaching). The management committee in which the Dean is Chairman, consists of Heads of Departments.

The School is divided into 8 Departments in Tropical Medicine: Protozoology: Helminthology: Medical Entomology: Tropical Hygiene: Tropical Nutrition: Microbiology and Immunology: Radioisotopes.

Research is conducted by teams which are sometimes drawn from individual Departments but are more often constituted by members of several departments. All personnel at some time or other take part in field work in surveys, fields trials etc.

Present Staff

The whole staff is Thai.

Professional: 28 M.D. Three have Ph.D. degrees; 11 Scientists.

At present the policy has been for all the young members of staff to be trained abroad. Over the period necessary for this the teaching duties of absent staff are taken over by established teachers in the undergraduate schools or in the Services. All are taking Ph.D. degrees 3 in USA; 4 in UK; 2 in Australia.

By October 1967, 7 of these staff members will have returned to their posts in Bangkok and 3 others will have gone abroad for training. There will thus be a maximum of 10 with Ph.D. degrees in the School by late 1967.

Scientists	11
Technicians	61
Nurses	24
Other	52
Total Staff:	176

Teaching Language

The courses for the D.T.M. & H. were originally given in Thai, except for lectures from foreigners and some of the ward rounds and laboratory demonstrations Over the last 3 years more English has been introduced and it is expected to teach almost entirely in this language from 1967 onwards.

It will then be possible for English speaking doctors from neighbouring countries to take the D.T.M. & H. Bangkok, or undergo training in specific subjects.

The facilities of the School are open for the use of international and national organizations.

Two international schools have been held in the School. FAO/WHO Training course in Nutrition (1964).

IAEA Training School or medical application of Isotopes (1966).

In 1966 the Second International South East Asia Conference on Parasitology was held in the School.

Financial

The basic budget for running the School and special grants for development come from the Thai Government (Prime Minister's Office) via the University of Medical Sciences and the National Council for Education.

Research is paid for largely by grants in aid, plus an internal fund derived from the income from private patients, all of which is pooled.

The budget for 1964-65 was 3,184,800 baht. For 1965-66 it is estimated at over 4 million baht.

Research Funds from outside Sources for 1965-66 were mostly continuing grants for long-term research).

$30,060 from US Army Medical Research and Development Command (Filariasis, Schistosomiasis and Leptospirosis).

$4,500 from WHO (Malaria).

$4,040 from the International Atomic Energy Agency (iron metabolism in hookworm infection).

Small grants were also made by Ciba Ltd. ($2,500 for amoebic liver abscess research) May and Baker Ltd. ($1,500: Scrib Typhus).

The Government of Japan presented equipment for research and teaching.

Fellowships for study abroad were given by the government of Australia, Canada and the United Kingdom and by the International Atomic Energy Agency.

The Thai National Research Council granted 45,000 baht for research on scrub typhus and the same amount for leptospirosis.

The University of Medical Sciences contributed 27,000 baht for research projects.

Donations of 85,000 baht were received from various local individuals and organizations.

The income from private patients amounted to approximately 100,000 baht. This was used partly for hospital expenses, partly to cover the costs of field research.

Budgets for 1960-67 are appended.

The Personnel who will be back with Ph.D.

		From	Date		Research
1.	Tan	Liverpool	Oct.	1966	Malaria
2.	Pensri	Columbus, Ohio	June	1967	Med. Entomology
3.	Pitaya	Toronto	June	1967	M.Sc. (Pharm.)
4.	Panata	Liverpool		1967	Radio-isotope
5.	Sricharoen	Liverpool		1967	G-I absorption and Diseases of G-I
6.	San	Liverpool	Oct.	1965	Schistosomiasis
7.	Mario	Philadelphia		1967	Pathology
8.	Phicha	Tulane	Mar.	1968	Amoebiasis

	From	Date	Research
9. Nitaya	Sydney	1968	Radio-isotope
10. Manoon	Brisbane	1969	Parasitology

Others

1. Pravan	London	1967	D.C.T.M.
2. Prayong	Japan	1967	B.Sc.Med.Tech (Parasitology)
3. Kosump	Israel	1967	B.Sc.Med.Tech. (Haemotology)

On List		Abroad In	
1. Praneet (M.Sc.)	Israel	1967	Nutrition, Biochemistry
2. Charin (M.Sc.)	Japan	1967	Schistosomiasis
3. Supat	Liverpool	1967	Filariasis

M.Sc. now	Ph.D. now
1. Suvat	1. Chamlong
2. Boondham	2. Kanjika
3. Mukda	3. Savanat

Facilities (School of Tropical Medicine)

Library

1. Textbooks	459 vol.
2. Journals	326 vol.
3. Periodicals	
English	91
Thai	18

Space for Research (Expanded Program)

1. **Available Immediately**

i. Three rooms	80 sq.m.
ii. Sixteen rooms	312 sq.m.

2. **Available next year**

i. Twelve rooms	312 sq.m.
ii. Eight rooms	336 sq.m.

Further Extension

At the present time a big piece of land (80 x 80 sq.m.) next to the Faculty of Tropical Medicine, can be used for construction of two new six-storey buildings (each = 40 x 20 sq.m.).

Visiting Staff: Visitors: External Aid

In addition to the lecturers recruited from local medical Schools as substitutes for the young staff training overseas, the School receives visits for short and long periods from abroad.

Visitors in 1965 - 66 included:

Colombo Plan: 2 consultants from the UK, 2 from Japan (1 in entomology for 18 months).

World Health Organization: 1 short term consultant on parasitology.

IAEA: 1 consultant on radioisotopes.

Fellowships etc. for staff were provided by the Colombo Plan: Nursing (Australia); Technology (2 filariasis in India); Tropical Medicine (England).

YEAR	BUDGET	GRANTS INTERNAL	 EXTERNAL	CONSULTANTS
1959	-	-	-	Maegraith
1960 (Oct.1959 - Sept.1960)	67,000	2,175	-	Komiya
1961	120,000	4,980	-	Maegraith Sutaman Yokogawa
1962	298,500	4,720	48,137	Yasuraoka Raghavan
1963	248,500	5,280	73,146	Maegraith Komiya Kurihara McRae
1964	155,430	5,730	71,980	Maegraith Sasa Ackerman Komiya
1965	159,240	6,995	26,940	Maegraith Reid Suzuki Yasuno Garby Sasa
1966	203,330	9,785	30,060	Maegraith Yasuno
1967	201,000			

(6)
SEATO MEDICAL RESEARCH PROGRAM
Bangkok, Thailand

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A. History: At the 6th Council Meeting of Ministers in 1960 at Washington D.C., it was proposed that the SEATO Cholera Research Laboratory in Thailand be converted into a SEATO General Medical Research Project and that other member Governments be encouraged to participate in it. The Thai and U.S. Components of the SEATO Medical Research Laboratory were established by an exchange of diplomatic notes between the Royal Thai and the United States Governments on 23 December 1960.

The second project of the SEATO Medical Research Program in Thailand is the Clinical Research Center. This was jointly established by the Royal Thai Government and the U.S. Government (respectively represented by the University of Medical Sciences and the U.S. Army Medical Service) on 25 April 1963.

B. Mission: The mission is to conduct medical research, to assist with the education and training of medical and allied personnel, and to provide special diagnostic laboratory facilities for patient care in cooperation with Thailand and other SEATO nations, for the benefit of all.

C. Organization: At present, the Royal Thai Government and the Government of the United States of America have contributed complete components. From time to time other member nations have sent individual investigators to work here. It is hoped that other complete components will be added to the program in the future.

There are two Thai Components, one for the Medical Research Laboratory and one for the Clinical Research Center. The single United States Component, however, works in both areas.

1. Thai Component of SEATO Medical Research Laboratory. This Component is responsible to the Ministry of Defense through the Director-General, Major General Pung Phintuyothin, MC, RTA, General Pung is also Director of the Thai Component and has served in this dual capacity since May 1961. The Deputy Director, Captain Samrit Jatinandana of the Royal Thai Navy was appointed in December 1962.

2. Thai Component of SEATO Clinical Research Center. This Component is responsible to the Rector of the University of Medical Sciences through the Director-General of the Clinical Research Center, Swasdi Skulthai, M.D. The Director of the Component is Aree Valyasevi, M.D.

3. United States Army Medical Component, SEATO. There is a single U.S. Component with activities in both the Medical Research Laboratory and the Clinical Research Center. This Component under its Director, Colonel Stefano Vivona, MC, is a special foreign activity of the Walter Reed Army Institute of Research.

4. Facilities. Until the new Clinical Research Center and Medical Research Laboratory buildings are completed, the activities will continue to be dispersed in eleven buildings in various parts of Bangkok with a total floor space of 81,000 square feet. With completion of construction, the total floor space will be about 200,000 square feet. In addition to the main facilities in Bangkok, semi-permanent locations are established throughout Thailand as required. These presently include facilities in the North at Chiengmai, in the Central area at Phrabuddhabat, and in the Southeast at Cholburi.

5. Research Activities

a. Clinical Research Center. Composed of Professional, Laboratory, and Nursing Services, it has primary responsibility for the care of patients on the wards of the Clinical Research Center. Clinical studies are done on disease conditions peculiar to or common in the area.

b. Medical Research Laboratory

1) Bacteriology and Mycology. Studies the ecology and etiology of bacterial and fungal diseases. Particular emphasis has been put on diarrheal diseases. Other major areas of interest are diseases caused by fungi, venereal diseases, melioidosis, respiratory disease.

2) Entomology. Conducts investigations on the distribution, biology, and medical importance of Arthropods (insects, mites, ticks, scorpions, etc.). A monograph of the mosquito fauna of Thailand is being prepared. Work has been devoted particularly to the mosquito vectors of malaria, dengue, and Japanese encephalitis and the chigger and tick vectors or scrub typhus and other rickettsial diseases.

3) Epidemiology and Special Studies. In addition to providing assistance in epidemiologic technique and analysis of data, there are several specialized sections. The Rickettsial Disease Section studies scrub typhus and other rickettsial disease. Other specialized survey teams are available for studies of malaria, etc.

4) Neoropsychiatry. This department has psychiatrists, a neurologist, psychologists, and social anthropologists on its staff.

Studies are being done on the problems of transcultural communication and on the impact of modern science (particularly medicine) on traditional patterns of village life. The neurological aspects of tropical diseases, especially malaria, are being studied.

5) Parasitology. Conducts studies of various aspects of human parasitic infections including identification and distribution of intermediate and natural reservoir hosts, clinical manifestations of human infection, feasibility of new experimental hosts, and evaluation of new drugs for prophylaxis and treatment.

6) Experimental Pathology. Applies histopathologic techniques to the investigation of mechanisms of disease production in human and animal material. Functions as consultant to the Royal Thai Army Institute of Pathology and various other institutions in processing and reviewing cases of unusual interest.

7) Veterinary Medicine. Studies diseases of domestic animals which are transmissible to man; such as brucellosis, leptospirosis, rabies. The feasibility of using indigenous non-human primates as laboratory animals is a major project. This department is also responsible for supplying other departments with normal healthy laboratory animals originating in a defined environment.

8) Virology. Primarily interested in the arthropod borne viruses, but also studying epidemic respiratory and enteric viruses. Investigations of difference in response to arboviruses of Oriental and Caucasian populations are being done. These are conducted jointly with the School of Public Health.

6. Education. The graduate students of the University of Medical Sciences are assigned with various investigators. This enables the students to accomplish the research required for their graduate degrees. In addition, members of the three components teach at the various schools of the University of Medical Sciences.

7. Personnel. The personnel of the three components are as follows:

a. Professional level (M.D., DVM, Ph.D,)	70
b. Technician level	218
c. Other	110
	398

D. Areas of Interest. The major emphasis is on communicable disease since these constitute the major source of morbidity and mortality in this area. In addition, other diseases and metabolic problems peculiar to or prevalent in the area are being studied.

The following is a list of conditions in which there is major and continuing effort. Sporadic diseases are studied as the opportunities arise.

1. Infectious Diseases

Arboviruses

Cholera

Diarrhea

Eosinophilic Meningitis

Filariasis

Fungus Disease

FUO

Gnathostomiasis

Gonorrhea

Infectious Hepatitis

Leptospirosis

Malaria

Meliodosis

Schistosomiasis

Scrub Typhus

Zoonoses

Flukes

Rabies

Respiratory Viruses

2. Non-Infectious Problems of Thailand

Gastro Enterologic Studies

Hematologic Problems

Neuropsychiatric Studies'

3. Other

Ectoparasites and Mosquitos

Laboratory Animal Development Project

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(7)
FACULTY OF PUBLIC HEALTH

Founded in 1948

Function: Essentially teaching, both medical and paramedical. Also the study of public health aspects of local community communicable diseases, the application of preventive measures, and the application of existing knowledge in an experimental manner to endemic problems in rural areas.

Buildings: Total area of present building (the original) in about 50,000 sq. feet. A new building nearing completion will double this. The extension will be used chiefly for teaching, thus reducing the present congestion. It will also contain the library and there will be a floor devoted to viral infectious (entero. and respiratory viruses) and one for nutrition.

Student numbers:

1965 : 190
1966 : 215

This number will about double with the new extension.

A new animal house is to be built for small animals, this greatly increasing the spare available for breeding mice for virology.

There are outstations at Phrabuddhabhat (malaria), Udorn (Nutrition?) Chiengmai (Trapping Animals).

Working in the School of Tropical Medicine is Dr. Brandt, now completing in 3 years survey of the snails of Thailand.

Teaching:

A. Teaching Departments

1. Biostatistics
2. Epidemiology
3. Health Education*, **
4. Maternal and Child Health
5. Microbiology
6. Nutrition**
7. Parasitology
8. Public Health Administration*
9. Public Health Nursing*, **
10. Sanitary Engineering.
11. Sanitary Sciences**

*Under legal proceedings.
**With school under the same name attached.

Help is given details in the teaching for the Diploma of Tropical Medicine and Hygiene in the School of Tropical Medicine where staff members teaching medical statistics and certain aspects of epidemiology.

There is some space available for visiting scientists and workers.

Field stations are used for teaching purposes and for addition studies of endemic infectious in local population. The most important is at Bang Kaen.

Financial:

Recently the Thai government supports the Faculty. The Rockefeller Foundation build the regional virus laboratory. Current help comes from SEATO (for virus research) 1-3 Fellowships in Health Education are offered by USOM. The School has requested USOM to send trainees to Harvard for the Master degree in Health Education. UNICEF has helped in providing facilities for audiovisual teaching in material and child health.

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INSTITUTES PRODUCING BIOLOGICAL PRODUCTS

(In Thailand at Present)

1. Division of Science (Saowabha Institute), The Thai Red Cross Society (1965)
    - (1) Cholera vaccine - 1,797,790 c.c.
    - (2) Combined cholera and typhoid vaccine - 1,771,750 c.c.
    - (3) Typhoid vaccine - 4,890 c.c.
    - (4) Rabies vaccine for man - 986,840 c.c.
    - (5) Rabies vaccine for animals - 35,560 c.c.
    - (6) Smallpox vaccine (lymph) - 85,800 ampules
    - (7) Antivenum serum (fluid and dried) for cobra, King cobra, banded krait, Russel viper and Agkistrodon blomhoffi (viper) total - 433,170 c.c.
    - (8) Diphtheria Toxoid - 7,800 c.c.
    - (9) B.C.G. vaccine - 208,000 c.c.
    - (10) Tuberculin - 294,000 c.c.
2. Department of Medical Sciences, Ministry of Public Health (1965)
    - (1) Small-pox vaccine (lymph) 2,245,200 doses
    - (2) Freeze-dried smallpox vaccine - 1,948,300 doses
    - (3) Rabies vaccine for man - 397,020 c.c.
    - (4) Cholera vaccine - 4,128,150 c.c.
    - (5) Diphtheria toxoid - alum precipitated - 792,440 c.c.
    - (6) Pertussis vaccine - 19,480 c.c.
    - (7) Tetanus toxoid - 72,500 c.c.
    - (8) Combined Diphtheria toxoid and Pertussis vaccine - 46,520 c.c.
    - (9) Combined Diphtheria-tetanus toxoid & pertussis vaccine (recently produced in 1966)
    - (10) Typhoid-paratyphoid vaccine - 9,350 c.c.

3. Army Institute of Pathology

Cholera vaccine etc. for military use, the details of which may be available from the Institutes if needed.

4. Department of Livestock Development, Ministry of Agriculture producing vaccines for animals in 1965 as follows:

(1) Rinderpest vaccine - 322,040 doses

(2) Hemorrhagic septicaemia vaccine - 1,185,070 doses

(3) Anthraxspore vaccine - 75,730 doses

(4) Hog cholera vaccine - 245,870 doses

(5) Foot and Mouth Diseases vaccine - 282,610 doses

(6) Fowl-pox vaccine - 2,246,400 doses

(7) Chicken and Duck cholera vaccine - 527, 475 doses

(8) Infectious bronchitis vaccine - 1,165,500 doses

(9) New Castle vaccine - 14,855,600 doses

(10) Rabies vaccine - 14,200 doses

(11) Black legs vaccine - 6,180 doses

All above mentioned vaccine for animal uses.

(N.B. University of Medical Sciences helped produce cholera vaccine on request of the Ministry of Public Health during the last two cholera epidemics in Thailand.)

/s/
SVASTI DAENGSVANG
Special Consultant to Director

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(9)

WHO AEDES RESEARCH UNIT, BANGKOK

The Unit is accommodated in the Department of Medical Sciences (Ministry of Public Health).

It was built up during May - September 1966 by Dr. W.W. Macdonald (Liverpool School of Tropical Medicine) assisted later by Dr. R.J. Tonn (WHO Entomologist) and Professor P.M. Sheppard (Liverpool).

The subjects of the Unit are to carry out research on species of Aedes which might transmit dengue or haemorrhagic fever and, subsequently, to formulate practical means of control of the mosquitoes. Work which is at present concentrated in Bangkok, includes larval and adult surveys, the study of insecticides and control methods and the movements and flight range of marked adults.

Scientific staff consists of Project Leader, three entomologists from WHO and one entomologist: biologist from Thailand.

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(10)
ANNEXURES FOR THAILAND

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A. University of Medical Sciences (Roneo)

B. University of Medical Sciences (Handbook)

C. M.S. Programme.

Curriculum Chulalongkorn Hospital Medical School

Curriculum for Diploma in Medical Sciences

D. Faculty of Tropical Medicine

Annual Report 1964-65

E. Progress Reports

Faculty of Tropical Medicine

1964

1965-66 (including Report on Surveys in NE in relation to health problems and socio-economic developments).

F. Faculty of Tropical Medicine

Outline of Current Research 1966

G. Staff of Faculty o. Tropical Medicine

Curriculum.

H. Faculty of Public Health. (Roneo)

Staff of Faculty of Public Health.

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PHILIPPINES

SCHEDULE OF VISITS AND CONSULTATIONS OF SEAMES TASK FORCE ON TROPICAL MEDICINE

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September 14, 1966	5:00 p.m.	Arrival by Swiss Air
September 15, 1966-Thursday	8:30 a.m.	Call on the Secretary of Health Hon. Paulino Garcia
	9:00-10:30 a.m.	Bureau of Research and Laboratories Dr. Pesigan and Staff
	10:30-12:30 a.m.	Bureau of Disease Control Dr. Uygauanco and Staff
	12:45 p.m.	Luncheon tendered by the Director Bureau of Research and Laboratories
	2:30-3:45 p.m.	U.P. Institute of Hygiene Dean Valenzuela and Staff
	4:00-5:00 p.m.	Call on the Secretary of Education Hon. Carlos P. Romulo
September 16, 1966-Friday	8:00-a.m. 12:30 p.m.	Alabang Serum and Vaccine Production Laboratories
	1:00-2:30 p.m.	Luncheon tendered by Hon. Carlos P. Romulo
	3:00-5:00 p.m.	Food and Nutrition Research Center Dr. Conradro Pascual and Staff
September 17, 1966-Saturday	9:00-a.m. 1:00 p.m.	U.P-P.G.H. Medical Center Dean Barrera Dr. R. Rascual and Staff.
	1:00-2:30 p.m.	Luncheon tendered by Director R. Pascual
	5:30 p.m.	Leave for Kuala Lumpur.

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The SEAMES Task Force on Tropical Medicine arrived in Manila 5:00 p.m. September 14, 1966. On September 15, 1966 the team was received by the Honorable Paulino J. Garcia, Secretary of Health of the Republic of the Philippines. The Secretary welcomed the task force, and stated that if the facilities for postgraduate education in tropical medicine in the Philippines met the requirements of the task force, he was prepared to go into the second stage of negotiations. The Secretary discussed the Four-Year Health Program, a copy of which is attached. This document lists the existence of the following components of the Department of Health.

1.

Rural Health Units	1,382
Physicians	1,304
Nurses	1,299
Midwives	2,298
Sanitary Inspectors	1,782

500 of these health units are completely staffed and equipment of them is suboptimal in quantity and quality.

2. Puericulture centers 600

3. Government Hospitals (total) 139

Medical Centers	4
Regional Hospitals	5
Special Hospitals	5
Training & Teaching Hospitals	14
Provincial Hospitals	34
Emergency Hospitals	77

Approximately half of the total of 18,000 beds are located in the 5 special hospitals. Many of these are neuro-psychiatric beds, 98 new have been proposed, totalling 2,500 beds.

4. Bureau of Research and Laboratories.

Dr. T. P. Pesigan, Director, met the task force and conducted it through the laboratories, both those located in Manila and the Serum and Vaccine Production Laboratories in Alabang. He also took the team through the San Lazaro Hospital for communicable diseases, where several cases of haemorrhagic fever Cholera El Tor were confirmed. This Bureau performs three major functions:

a. Diagnostic and referral services. These include laboratories for pathology, serology, chemistry, bacteriology, parasitology, and virology.

b. Production of vaccine and sera, and processing of plasma. The unit at Alabang includes a large mouse-breeding facility.

5. Malaysia Eradication Program

40 medical officers are concerned with this program. It is planned for completion in 1972.

6. Bureau of Disease Control

The Director, Dr. Uyguanco briefed the task force on the activities of this Bureau. It is concerned with:

a. Leprosy. 69 physicians are assigned. There are approximately 18,000 registered cases, $\frac{3}{4}$ of whom are desegregated. Research is underway on the biochemistry of the Lepra reaction. Medical students from Manila Central University and laboratory technicians from Far Eastern University are taught here.

b. Tuberculosis. 110 physicians are assigned to this activity.

c. Filariasis, venereal disease control, cancer and mental hygiene programs are smaller.

7. Disease Intelligence Center

Dr. J. J. Dizon briefed the task force on this activity. It includes:

a. Statistics program.

b. Epidemiology program.

c. Research program. Projects underway are: Studies of Cholera El Tor (NEC/AID) since 1962. Cholera research (Philippines/Japan/WHO) 1964, Hemorrhagic fever (WHO), Beri-beri deaths (NSDB).

On September 15, 1966 the task force also visited the Institute of Hygiene of the University of the Philippines, where they were received and briefed by Dean Victor C. Valenzuela. This institute founded in 1927, has four principal functions:

1. School of Public Health. Certificates and degrees granted:

a. Certificate in Public Health. This is a one year course. 60% of the enrollment is made up of M.D.'s, the rest by Nurses, Dentists, and Public Health Engineers.

b. Master of Public Health. A two year course.

c. Master of Hospital Administration.

d. Master of Public Health Engineering.

2. As a Department of the University for graduate instruction. Master of Science degrees are given in Microbiology, Parasitology, and Public Health Nutrition.

3. As a Department for undergraduate instruction in the U.P. School of Medicine and other Schools of health sciences giving instruction in Medical Microbiology, Parasitology, and Public Health Nutrition.

4. As an undergraduate school, granting Bachelor of Science degrees in Hygiene for medical technicians, statistical aides, sanitarians, health educators, and college teachers.

Faculty

Academic full-time	39
Lecturers, part-time	11

Students

Certificate in Public Health	50
MPH	9
MHA	17
BS Hygiene	37

Research

Projects underway include Microbiological research and a study of growth and development of Filipino children.

On 15 September, 1966 the team was received by the Honorable Carlos Romulo, Secretary of Education and President of the University of the Philippines. The task force was briefed by the Secretary and by his under-secretary, Dr. Onofre Corpuz. The Secretary spoke of the plans for the Philippine Center for the Health Sciences to be located on the main University campus. This will be a ten year project. The present yearly output of approximately 1,000 medical graduates is near to the target goal for the country. The task force was told of the yearly movement to the United States and elsewhere of large numbers of Medical graduates.

The secretary expressed the view that the idea of a regional center for tropical medicine is good but that it costs a lot of money and therefore preferred in the meantime developing and strengthening the national organizations. He mentioned his proposal to put up a Philippine Center for the Health Services which would integrate under one roof all medical and paramedical teaching and research.

On 16 September, 1966, following a visit to Alabang Serum and Vaccine Laboratories and to a Rural Health Center in Las Pinas, the task force was briefed on the operations of the National Science Development Board by Dr. Conrado Pascual. This Board, which has the status of a Department in the Philippine Government, was established by an act of Congress in 1958. Its function is to stimulate, direct, and coordinate progress in science. It functions through its commissions, of which the National Institute of Science and Technology is one. This Institute is responsible, inter alia, for research centers in food and nutrition, biology, and medicine, as well as for a Documentation Center. The Medical Research Center is carrying out research on indigenous pharmaceuticals, respiratory allergy, the development of micro-chemical methods for pediatric use, and the screening of plants for antibilotic and anti-cancer activity.

The NSDB also functions as a granting agency, and accepts project proposals from public and private universities. It is presently supporting 9 projects in medical research totalling about 73,000 pesos. Projects in Nutrition (P25,000) and Basic Research (P45,000) are also being supported.

The NSDB also has a publication program, including the journal of Science and Technology and the Science Bulletin.

On September 17, 1966 the team visited the University of the Philippines School of Medicine and the Philippine General Hospital. Dean Benjamin Barrera and his faculty, and Dr. Reginaldo Pascual, the Director of PGH briefed the task force on the facilities, curriculum, and research work in progress. The Philippine General Hospital, a one thousand bed general hospital serves as the teaching hospital of the U.P. College of Medicine. A ward with eight cases of hemorrhagic fever exclusively for research on this disease was also shown to the team.

The Cancer Institute under the Philippine General Hospital used for the treatment and research on cancer was also shown.

Other research projects in progress were:

1. Placental metabolic studies by Dr. Litonjua which is financed by the National Science Development Board for salaries and isotopes, and Rockefeller and China Medical Board grants for equipment.

2. Effect of drugs on pigment production in bacteria.

3. Vascular studies in dogs utilizing catheterization equipment.

The University of the Philippines School of Medicine was established in 1907. It is government supported school which enrolls 125 students in each entering class. Most of the pre-clinical teaching that relates to tropical medicine is within the Institute of Hygiene.

Medical and Paramedical Schools

Before any country puts up any graduate school of medicine, it should first see to it that it is producing a sufficient number of doctors and health personnel to attend to the medical needs of the people. Otherwise any proposal to establish such a center for graduate training and research might meet with some opposition. The proponents might be criticized for not attending to first things first.

Fortunately for the Philippines, a more than sufficient number of doctors and other health personnel for the country are graduated each year. There are seven medical schools. Among these, one-the University of the Philippines is a government institution while the other six are privately owned. The oldest medical school is the Faculty of Medicine of the University of St. Tomas in Manila founded during the Spanish occupation of the Philippines. The College of Medicine of the University of the Philippines was founded in 1907 as the first unit of the university.

The other five private medical schools are post World War II institutions which were founded in answer to the general clamor for higher education. Three of these-the Far Eastern University Medical School, the Manila Central University Medical School and the University of the East Medical School are located in the Manila area while two-the Southwestern University Medical School and the Cebu Institute of Technology Medical School are both located in Cebu City. Except the University of the Philippines and the University of East which limit the contering class to about 120 students the other schools have been admitting more than 300 students in the first year. However as a requirement for US AID and Philippines government assistance, the three bigger schools have been required to limit the size of the contering class to not more than 300 students beginning with the school year 1965-66. The three other smaller schools were required to enroll not more than 200 first year students since the start of the assistance program in 1962.

The seven medical schools used to graduate more than 1500 every year but with the limitation in the enrollment the number of graduates in expected to be less than 1000 every year.

At the University of the Philippines practically all of the members of the staff in the basic medical science departments are full-time and those in the clinical departments are geographic full-time. In the private medical schools practically all the staff in the basic medical science departments are full time. Most of those in the clinical departments are on part-time basis.

The University of the Philippines has its own adequate teaching hospital. Although the private medical schools also have their own teaching hospitals of at least 100 beds as required by law, these are not adequate and are supplemented through affiliation with one or more of the existing government hospitals approved by the Department of

Health and Board of Medical Education for teaching. Some of the research being done in these schools is done either jointly with the Medical Research Center of the NSDB or by the school alone financed with funds from the National Science Development Board.

The 1000 yearly output of medical graduates will meet the country's needs consonant with its economy. Estimates of the number of physicians in actual practice vary but the nearest estimate is about 15,000. This gives a ratio of one physician for two thousand population. In many places however the ratio is one to 4000 or 5000 while in the cities it may be 1:700. To correct this anomaly the government has provided incentives for young doctors to go to the rural areas by raising the salary scale. The Philippine Medical Association conjointly with civic organizations has launched its MARIA project (Medical Assistance to Rural Indigent Areas) by building hospitals in remote rural areas and paying the salary of the staff as a means of providing further incentives.

Trained medical technicians are needed in any programme of medical research. At present there are ten schools of medical technology including that of the University of the Philippines. All except one of the private medical schools have a school of medical technology. Besides, the University of the Philippines is training graduates in science including zoology chemistry, physics, botany, and entomology. Many of these medical technology graduates go abroad for further training every year and come back as better trained medical technicians.

Schools of Nursing and Schools of Midwifery play a major role in the solution of many health problem especially in the rural areas. Rural health units are staffed by a physician a dentist and nurse midwife of midwife and three schools provide the trained people to fill the position A sufficient number of dentists nurses and midwives are graduated every year to attend to the health of the people. The problem of deliveries by untrained and unlicensed midwives has been particularly serious. Maternal mortality was high. Then the department of Health initiated a campaign to train the unlicensed midwives in the use of aseptic procedures and distributing obstetric kits at the same time. They followed a rush for career in midwifery. Ten such schools are now training midwives sufficient to staff all the rural health units and to gradually replace the old and untrained midwives called "hilots". There are also fifteen private and five government nursing schools and one government and six private schools of dentistry.

Libraries

The libraries of the Institute of Science, the U.P-P.G.H. Medical Center, the University St. Tomas Faculty Medicine, Far Eastern University are well stocked with medical references in tropical medicine. Current issues of several medical journals including Tropical Medicine are also available in these libraries.

Status of Medical Research

Most of the medical research is done at the National Institute of Science, University of the Philippines, the U.P.-P.H.G. Medical Center the Bureau of Research and Laboratories, Bureau of Medical Services, the Culion Leper Colony in Palawan and the Leonard Wood Memorial in Ceby City. Some of the more important researches being done now are those bearing Hemorrhagic fever, Cholera El Tor, Malaria, Schistosomiasis, Nutrition.

Regional Center for Tropical Medicine

The project proposal to put up a regional center in the Philippines is feasible. The present U.P. Institute of Hygiene, U.P-P.G.H. Medical Center would form the core of this centre. The food and Nutrition Research Center and the Medical Research Center of the National Science Development Board adjoining these institutions, would form part of the complex. All of these institutions are now staffed with competent men who have been trained abroad. The physical plant is fairly adequate although additional improvements would be required for the regional center offices and staff residence and quarters. Sophisticated apparatus and instruments for research are available in these institutions through assistance from the US AID., China Medical Board and Rockefeller Foundation. Wards would be easily accessible at the Philippine General Hospital, although this would also be available at the San Lazaro Hospital.

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APPENDICES

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1. National Medical Research Program for the Philippines, National Science Development Board, Manila, 1965.
2. A Four Year Health Development Program, Department of Health, Manila.
3. Five-Year Development Plan, University of the Philippines Institute of Hygiene, Manila, 1966.
4. Annual Report, University of the Philippines Institute of Hygiene, Manila, 1966.
5. A Philippine Center for the Health Sciences, Undated.
6. Alabang Serum and Vaccine Laboratories, Manila, 1965.
7. Highlights from the Annual Report for FY 1965-1966, Food and Nutrition Research Center, National Institute of Science and Technology, National Science Development Board.
8. Personnel Chart of the Bureau of Research and Laboratories, FY 1966-1967.

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MALAYSIA

VISIT TO MALAYSIA

The SEAMES Task Force on Tropical Medicine which visited Malaysia comprised the following.

International Consultants

1. Professor Brian Maegraith
2. Professor John Wellington
3. Colonel W.D. Tiggert

Asian Representatives

4. Professor Chamlong Harinasuta (Thailand)
5. Dr. Julian Paguyo (Philippine)
6. Professor Nguyen Huu (South Vietnam)
7. Dr. Ungku Omar Ahmad (Malaysia)

Sunday 18th September 1966

11:00 a.m.: Arrived at Subang International Airport, Kuala Lumpur. Welcomed by Dr. R. Bhagwan Singh on behalf of the Ministry of Health, Mr. Chong on behalf of the Ministry of Education and Dr. H. S. Ahluwalia from the Institute for Medical Research who would act as a liaison officer during the Task Force's tour of Malaysia. At their own requests three members of the team were placed at the Hotel Merlin and two members stayed at the Malaysia Hotel.

1:00 p.m.: The Task Force (with the exception of Professor Nguyen Huu) and the welcoming officials were treated by the Director, Institute for Medical Research to a Satay lunch at Kajang.

3:00 p.m.: Visited the Royal Selangor Golf Club for coffee with a number of Institute for Medical Research Officers.

3:30 p.m. Four members of the Task Force namely: Professor Maegraith, Professor Wellington, Colonel Tiggert and Dr. Ungku Omar Ahmad toured the University campus. The group was also conducted around the main University Library.

8:00 p.m. Chinese dinner at the Metro Restaurant as guest of Dr. R. Bhagwan Singh, Senior Bacteriologist, Institute for Medical Research.

Monday 19th September 1966

10:00 a.m.: Visited the General Hospital, Kuala Lumpur. The Task Force was briefed on the present development plans for the Hospital by the Medical Superintendent, Dr. H.S. Ray. The new General Hospital would have 1,200 beds on completion (i.e. excluding maternity and

and tuberculosis cases which have their separate and recently completed hospitals within a short distance of the General Hospital compound).

10:30 a.m.: Visited the Institute for Medical Research Kuala Lumpur. The Director talked to the Task Force on the present reorganization and the proposed development projects of the Institute.

11:30 a.m.: Coffee with Senior Officers of the Institute. During the visit to the hospital and the briefing by the Director, I.M.R. the Task Force was accompanied by Dato R.P. Pillay, the Personal Physician to His Majesty the King and the Cabinet. The Task Force later went round the various divisions of the Institute for Medical Research.

1:00 p.m.: Entertained to lunch at the Selangor Club by Senior Officers of the Institute for Medical Research. Fellow guests included Professor Ralph Audy, Director, Hooper Foundation, University of California, San Francisco.

The Honorable Minister of Health, Malaysia, Enche Bahaman bin Shamsuddin, who was present at the club, greeted each member of the Task Force.

2:30 p.m.: Discussions at the Ministry of Health with the Director of Medical Services-cum-Permanent Secretary, Tan Sri Dr. Mohammad Din bin Ahmad. Other officers present at the discussion were Euche Khairuddin, Assistant Secretary (External Affairs), Ministry of Health and Mr. E.J. Martinez, Senior Records Officer, Ministry of Health, Malaysia. A visit was also made to the Development Division of the Ministry of Health where Tan Sri Dr. Mohammad Din and Dr. Fung Ung Seng, the Development officer described the development plans of the Malaysian Medical Services.

4:00 p.m.: Visited the National Tuberculosis Hospital. The Task Force was received by the Consultant Physician, Dr. Chong Pak Soon and Senior members of the Staff. A tea-party at the Nurses Hostel was given for the Task Force by the Matron and Senior Officers of the Hospital.

8:00 p.m.: An official reception at the Federal Hotel was given by the Honorable Minister of Health. Malaysian Officials attending the reception included the Director-cum-Permanent Secretary of the Ministry of Health (Tan Sri Dr. Mohammad Din bin Ahmad); Permanent Secretary Ministry of Education (Tan Sri Abdul Aziz bin Yeop), Chief Education Advisor, Ministry of Education (Tuan Haji Hamdan bin Sheikh Tahir); Deputy Director, Medical Services, Hospitals (Dato Ten Yoon Foung); Deputy Director, Medical Services, Dental, (Dr. Abdul Karim bin Nawab Din); Chief Educational Planning Development Officer, (Enche Ponniah), the Dean, Faculty of Medicine, University of Malaysia, Kuala Lumpur (Professor T.J. Danaraj); the Training Officer, Ministry of Health

(Dr. Abu Bakar bin Ibrahim): the Development Officer Ministry of Health (Dr. Fung Ung Seng); the Senior Bacteriologist, I.M.R. (Dr. R. Bhagwan Singh); the Senior Pathologist, I.M.R. (Dr. H.S. Ahluwalia) and the Assistant Secretary (External Affairs), Ministry of Health (Enche Khairuddin).

Thursday 20th September 1966

9:30 a.m.: Visit to the Faculty of Medicine, University of Malaysia, Kuala Lumpur for a discussion with the Dean, Professor T.J. Danaraj on the spot observation of the various departments and the teaching hospital.

11:30 a.m.: Visited the National Operations Room at the Prime Minister's/Deputy Prime Minister's Department. The Task Force witnessed the integrated plans for the development of Malaysia.

1:00 p.m.: Lunch given by the Director, I.M.R. at his residence.

2:45 p.m.: Visit to the Public Health Institute where the Task Force was able to have discussion with Dr. Livera, the Deputy Director, Dr. J.S. Sodly, the Chief Municipal Health Officer of Kuala Lumpur and other members of the staff. Facilities for training Health Inspectors, Health Sisters, Health Visitors, and Junior Laboratory Assistants were shown to the visitors.

4:00 p.m.: Visited the Aborigine Hospital, Gombak. The Task Force was shown around the hospital by Dr. Norman Hang who was acting on behalf of Dr. Malcolm Bolton, the Midical Officer in Charge. Tea was served to the visitors by the Aborigine Staff.

Wednesday 21st September 1966

12:50 p.m.:Left Kuala Lumpur for Penang by Malaysian Airway.

2:05 p.m.: Received at Penang Airport by Dr. Narayanan, Chief Medical and Health Officer, State of Penang and Dr. J.K. Lucas, Senior Pathologist, I.M.R. Penang. The Task Force stayed at the Ambassador Hotel.

3:00 p.m.: Visited General Hospital Penang and the Snake Research Institute. Discussions were held with Dr. Narayanan, the Chief Medical and Health Officer. Dr. Yeoh (the Medical Superintendent) and Dr. Devaraj, the Consultant Physician and Honorary Director of the Snake Research Institute.

4:00 p.m.: Visited the I.M.R. Branch Penang where the Task Force was received by Dr. J.K. Lucas, the Senior Pathologist and Dr. Mustapha Othman, the Clinical Pathologist. The guests were served tea at the I.M.R. Penang.

8:00 p.m.: Dinner given by Dr. J.K. Lucas, the Senior Pathologist, I.M.R. Penang, at his residence. Guests included the Chief Medical and Health Officer, Penang, the Chief of United States Information Service, Penang, the Head of the British Council, and the President of the Penang Arts Council.

Thursday 22nd September 1966

8:30 a.m.: Left the island of Penang for the Malaysian mainland and visited the District Hospital Bukit Mertajam. The group was shown around by the Officer in Charge, Dr. N. Kunanayagam who is a Consultant Surgeon. There was discussion on the diseases pattern seen at the hospital and a tour of the wards.

11:00 a.m.: A visit to the Rural Health Centre at Kubang Sempah. The Task Force was received by the Health Officer in charge of the area as well as other resident staff of the center, including a Korean doctor, Dr. Kim.

1:00 p.m.: The Task Force returned to Penang where lunch was given at the Hospital by the staff of the Penang Medical Services. Officers present at the lunch included the C.M. & H.O. (Dr. Narayanan), the Senior Physician (Dr. Devaraj); the Senior surgeon (Dr. Vanniasingam); the State Dental Surgeon (Dr. Nerdin), the Director of the Public Health Institute, Malaysia (Dr. Raja Ahmad Nordin) The State Radiologist (Dr. Kulaveerasingam) the State Matron (Mrs. Jacobs): the Officer-in-Charge. Bukit Mertajam Hospital, (Dr. Kunanayagam), the Senior Pathologist, I.M.R. Penang (Dr. J.K. Lucos); and several senior Health Officers of the State and Northern Malaysia (Dr. Tan Hor Kh e; Dr. Abdul Ghani: and Dr. Che Lah).

2:30 p.m.: Meeting and discussion with the Honorable Chief Minister of Penang, Tan Sri Wong Pow Nee. The Chief Minister gave a talk on the development projects of his state with particular emphasis on technical and scientific training schemes in the Island of Penang.

6:00 p.m.: Left Penang for Singapore for an overnight stay en-route to Saigon.

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BACKGROUND ON THE STATE OF TROPICAL MEDICINE IN MALAYSIA

1. In writing this background, the term "Tropical Medicine" is interpreted in a most wide and embrasing term. Perhaps for the purpose of SEAMES, it may be interpreted as Medicine and Health problems which are endemic in this region and which need to be tackled urgently if the economic and social uplift of the people are not to be impeded.

2. Report of the Mission of the International Bank for Reconstruction

In 1954, the above named international agency visited Malaya and published its report in September 1955 (The Economic Development of Malaya) It commences its chapter on Public Health with the following paragraph;

"Not long ago, Malaya was one of the unhealthist places in the tropics. Today it is among the healthiest, comparing favourably with many countries in the sub-tropical climates. This is one of the world outstanding achievements of public health and medicine, a tribute to the British administrators and their medical and public health officers".

This statement was made twelve years ago, when most of Malaya was still under British Colonial rule. It was a fitting preparation for independence (August 1957) and since then under planned expansion programmes, the health service of Malaya has progressed steadily.

The authers of the Report on Economic Development of Malaya further pointed out that Malaya was fortunate in that its early development after 1875 coincided with the birth of bacteriology, the emergence of modern epidemiology and the effective means to control tropical disease; in short, preventive medicine was coming into its own. By the turn of the century, Malaria was beginning to come under control and the wealth of the country, together with its social legislation regulating the control and welfare of labour, enabled a modern medical administration to be established by the government.

An impetus to increased health was the foundation in 1900 of the Institute for Medical Research at Kuala Lumpur; it was at this Institute that the cause of beri-beri was first investigated and ascertained.

By 1910, the King Edward VII Medical School, later on designated as the Faculty of Medicine, University of Singapore, was turning out its first graduates with qualifications recognized by the British General Medical Council.

In 1961, a call was made for the establishment of a Faculty of Medicine at the University of Malaya, Kuala Lumpur. A Dean was appointed in 1963 and administration to the first year medical course was made in May 1964.

Writing as a senior officer responsible for a large section of the Malaysian Medical Services (Research and Laboratories), I know for certain that in many areas of Malaysia we have barely scratched the surface on problems concerning health and medicine.

Malaria is still rampant in many villages in the rural areas, so are anaemia, malnutrition, helminthiasis, and diarrhoeas.

3. Statistics

The following are some statistics on Western (or Mainland) Malaysia which comprises the states of Perlis, Kedah, Penang and Province Wellesley, Perak, Selangor, Negri Sembilan, Malacca, Johore Pahang, Trengganu and Kelantan.

Personnel

Estimated population at mid 1965:	8,039, 030
Number of registered doctors	1,423
Number of registered dentists (Bachelor of Dental Surgery)	208
Number of registered dentists (Chinese trained)	407
Number of registered Nurses (S.R.N. qualification)	2,631
Number of registered Assistant Nurses (non S.R.N.)	2,221
Number of registered Nurses (Total)	4,852
Number of registered Mid-wives	1,830
Number of Laboratory Assistants (Medical Laboratory Technicians)	163
Number of Health (or Sanitary) Inspectors	287

Hospitals or Clinical Institutions

Total number of Government Hospitals	58
Estimated number of Estate hospitals and Sick-bdys	70
Total number of Government Hospital beds (including Mental, Lepersarium, and Tuberculosis hospitals)	23,512
Number of dispensaries - Fixed	283
- Travelling	155
Total number of dispensaries	438
Number of Rural Health Centres, including Maternal and Child Health clinics	1,412

Particularly since five years ago, there has been a steady rebuilding, extension and modernizing programme of the hospitals. At the present time a large teaching hospital at the Faculty of Medicine and three large general hospitals at Kuala Lumpur, Ipoh and Seremabn are being built.

Training Institutions in Malaysia

Nursing Traing: 3 large, well established schools at Johore Baharu Kuala Lumpur and Penang. They run 3 year course leading to the S.R.N. diploma which is registrable with the Nurses Council of Great Britain (about 2,700 S.R.N. in Malaya). There are also nursing schools (S.R.N.) at Assunta Hospital (Private) and the new Faculty of Medicine, Kuala Lumpur.

Assistant Nurses Training: Less exacting courses are conducted in a number of general hospitals in Malaysia for Assistant Nurses. The diplomas given are only registrable as Assistant Nurses with the Nurses Council of Malaysia (approximately 2,300 Assistant Nurses in the country now).

Dental Nurses: The training of Dental Nurses and Dental Technicians is based on New Zealand scheme. The 3 years course is conducted in a special school in Penang. These Nurses are given higher pay than the S.R.N. They undertake dental care of school children. On behalf of the WHO, the school receives students from Burma, Singapore and Hong Kong.

Midwives: School for graduate S.R.N. nurse as well as for certified midwives (registered) are held at a number of lage maternity unit (1,830) registered midwives in Malaysia now).

Public Health

The Medical graduate (M.B.B.S.) training is undertaken at the Singapore University for the D.P.H. qualification. Lower Category of staff (assistant health nurse, midwives and sanitary overseas are trained at three training schools at Jitra Kedah, at Rembau, Negri, Sembilan and at Kuala Lumpur. The first school at Jitra was started with WHO.assistance in 1963.

Public Health Visitors School

Started in 1949. To gain admission students nurses must possess S.R.N. diplomas and hold recognised midwifery certificates. The course is one year full time, at the end of which period the students sit for the Health Visitors and School Nurse Certificate examination conducted by the Royal Society for the Promotion of Health (London). The School is now housed within the Public Health Institute which the Task Force visited at 2.45 pm. on Thursday 20th September 1966.

Public Health Training School

Started in 1959, it is now conducted at the Public Health Institute. The course is one year full time for health inspector of some experience in the service. The diploma is gained through an examination set by the Royal Society for the Promotion of Health, London.

School of Radiography

A school was established by the Malaysian Government some years ago and is affiliated to the Institute of Radiography, London. The examinations are conducted in Kuala Lumpur, with external examiners from London. Successful students receive the London diploma.

School for Medical Laboratory Technicians

Since before the war, training of Laboratory technicians for Malaya, and the Borneo states is conducted at the Institute for Medical Research. The yearly intake has never exceeded 20, for a three-year course. Now plans have been finalised for the setting up of a central school of Medical Laboratory Technology at the IMR Kuala Lumpur. In order to meet the acute shortage of technician for the 60 hospitals in the country the yearly intake will be at leastt 100.

Another school for training technicians is also being established at the Faculty of Medicine, Kuala Lumpur. This school will produce technicians to meet the need of the Faculty of Medicine own Laboratories.

School for Training of Junior Laboratory Assistant

There are altogether 1,412 Health Centres, Sub-centres and midwives clinics in Malaya. Most of these have to be provided with at least one junior laboratory technician in order to undertake simple tests for blood, urine, stools, and sputum. A detailed 6 months syllabus of training has been published by the I.M.R. Training will be conducted by the I.M.R. at the Public Health Institute.

Training of Medical Under Graduates

Until May 1964 teaching of Medicine to undergraduate was done at the Faculty of Medicine, Singapore which produces between 80 to 100 students a year. The Faculty of Medicine Kuala Lumpur began to take shape in 1963 and received its first admission in May 1964.

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RESEARCH AND POST-GRADUATE TRAINING ON TROPICAL MEDICINE OR OTHER RELATED SUBJECTS

These are carried out at the following institutions:-

(1) The Institute for Medical Research, Kuala Lumpur

(2) Leprosy Research Unit, Sungei Buloh (jointly with the Medical Research Council of Britain)

(3) Snake Research Institute, Penang

(4) Veterinary Research Institute, Ipoh

(5) Faculty of Medicine, University of Malaysia

The Leprosy Research Unit and the Snake Research Laboratory are to be integrated with the Institute for Medical Research (IMR). In addition, two field research projects, namely the arborvirus survey at Sarawak by the Medical Research Council of Great Britain and the Study of pattern of behavior of the various ethnic groups in Sarawak are also to be integrated with the IMR.

Until now the bulk of medical research and post-graduate training is undertaken by the Institute for Medical Research. The new Faculty of Medicine received its first admission in 1964, and it will be sometime before it can embark on a programme of research and post-graduate training.

THE INSTITUTE FOR MEDICAL RESEARCH

KUALA LUMPUR

MALAYSIA

Historical Background:

The Institute for Medical Research, known popularly as the IMR was established in 1900 (sixty six years ago). In a Government letter (Resident-General No. 3135) dated 10th July, 1901, the following announcement was made:

(1) The Government of the Federated Malay States wishes to call attention to a research Institute that it has recently established. The Institute is situated in Kuala Lumpur, the capital of the Federated Malay States, and is open to all workers irrespective of nationality.

(2) The Medical Department is fully equipped for special and general pathological work, for the scientific study of clinical medicine, experimental physiology and bacteriology. A modern mortuary with a refrigerator chamber is a feature.

(3) A Chemistry Department is in order for both organic and inorganic research. There is in addition a well-equipped Photographic Department, facilities for biological research and a good working library.

(4) The Institute and its resources are open to all irrespective of nationality under the conditions that usually obtained in such establishments.

(5) To the members of scientific commissions who visit the Malay Peninsula and neighbouring islands, the Institute affords an excellent opportunity for working up and preparing collect-material.

(6) To students of tropical medicine the field for work is large. Beri-beri, especially, exists under unique conditions. Malaria exists in at least four distinct types.

(7) The Institute is at present under the direction of Hamilton Wright, N.C. (McGill), and any communications in reference to the

Institute addressed to him will be welcome.

As seen in (7) above the first director and organiser of the new Institute was Dr. Hamilton Wright, an American who had studied Medicine at McGill University and was Pathologist at the London School of Tropical Medicine. Selected for appointment by Sir Patrick Manson under an agreement whereby the director of the Institute was chosen by a committee of management of the London School, Dr. Wright took up his duties in Kuala Lumpur on February 6th, 1900. The appointment was for three years only, the Resident-General, Mr. W.H. Treacher, having held the view that the head of the new Institute should not be a permanent official, but a temporary officer relieved every few years by a man "fresh from the schools of Europe or America". Wright left Malaya in February 1903, his mission to organize a medical research institute accomplished. He returned to the United States where, at the State Department, Washington, he played a leading part in drafting legislation against the opium traffic.

The second director was Dr. C.W. Daniels (1903-1905). He was superintendent of the London School of Medicine and a protege of Sir Patrick Manson. An exceptional research worker, Daniel later became the Medical Advisor to the Colonial Office, succeeding Sir Patrick Manson.

First Malaysian Staff of the I.M.R.

In 1903, Dr. Wu Lien-Teh became the first Malaysian to join the I.M.R. Born in Penang, Dr. Wu Lien-Teh was a Queen's Scholar at Cambridge and after qualifying in 1902, studied tropical medicine at (a) the Liverpool School of Tropical Medicine under Ronal Ross, (b) Bacteriological Institute of Halle (Germany) under Karl Fraenkel and (c) Pasteur Institute of Paris under Elie Metchnikoff. He left Malaya for China in 1907 to become famous as a plague fighter (1910-1911) Director of Manchurian Plague Prevention Service; in 1931-1937 Inspector-General of the National Quarantine Service of China and later an expert advisor to the League of Nations of Plague. On retirement from active service, he returned to Malaysia and in 1950 he wrote in the Jubilee Book of the I.M.R. the following passage:-

"I must now end my Recollections of the Institute. What a remarkable amount of research has been done within its walls by successive workers during the fifty years of its existence since 1900. Their labours in the field of malaria, beri-beri, and tropical typhus will remain long as models in the annuals of tropical investigation, and should serve as a stimulus to greater efforts and success by future

4

workers, who may be fortunate enough to be admitted to its staff".

Activities of the I.M.R. Since 1900

The various divisions of the I.M.R. were established gradually over the last 66 years. A general idea of past as well as recent research and studies done can be gleaned by looking at the list of publications which it produced. Although some records of publication before the war were missing, the present compiled list contain no less than 1,200 titles.

Since January this year, some 26 studies and research projects were started by the I.M.R. as follows:-

(1) Pilot Polio Survey of Kuala Lumpur (now completed)

(2) Nutritional survey of Maternal Cases at Kuala Lumpur

(3) Still-births Study at the Maternity Hospital, Kuala Lumpur

(4) Simian Malaria Study at Kaki Bukit, Perlis (Completed)

(5) Simian Malaria Study at Chenor, Pahang (Completed)

(6) Filariasis Survey of Krian (Completed)

(7) Aflatoxin Study (first phase completed and papers published

(8) Studies of Diarrhoea among the Aborigines (Completed)

(9) H. Fever and other virus studies (papers presented in Tokyo recently)

(10) Immunological Studies on Filariasis

(11) Field Studies of Typhus around Royal Malaysian Air Force landing zones in the jungle (Completed)

(12) Research on new laboratory methods for diagnosis of Rheumatoid factors (nearly completed)

(13) Trial of Freeze Drying method for Smallpox vaccines

(14) Studies on A. balabacensis in North of Malaysia Barat (field station being built)

(15) Studies on new Enzyme methods and a number of biochemical techniques for application in routine clinical pathological laboratories

(16) Socio-antrophological Studies concerning the reaction of Rural Malays to development projects (starting at Kampong Tahan, Pahang).

(17) New Studies on helmints and parasites (continuing)

(18) Tumour Registry covering whole of West Malaysia (just started).

(19) Isolation of Virus from bats.

(20) Studies on Salmonella Serotype causing human infections.

(21) Studies on Leptospirosis: evaluation of the SEL test and preparation of hyperimmune sera.

(22) Langat virus circulation experiment

(23) Measurement of Oestriol in faetal-placental circulation

(24) Measurement of Blood Volume in PPH

(25) Rapid Tests in Adrenal function

(26) ACTH Evaluation in Pituitary-Hypothbamic Studies.

The above mentioned studies do not include those undertaken by the United States Army Medical Research Unit, and the Hooper Foundation as their lists of activities were inadvertently left in Kuala Lumpur, and continuing studies for example, those carried out by the acarlogy unit, zoology and entomology units have not been included in the list.

STRUCTURE OF THE I.M.R.

Physically, the I.M.R. consists of the following Division in Departments.

1. Administration Division
2. Animal Production Division
3. Bacteriology Division
4. Biochemistry Division
5. Entomology Division
6. Haematology Division
7. Library
8. Malaria and Filariasis Division
9. Nutrition Division
10. Pathology Division
11. Publications Department
12. Serology Division
13. Steward
14. Stores and supply
15. Vaccine Profuction Division
16. Virus Division
17. Zoology Division
18. IMR Branch Ipoh
19. IMR Branch Penang
20. State Pathology Division, Johore
21. Hooper Foundation Division (includes Prasitology and Helminthology)
22. United States Army Medical Research Unit (includes Scrub Typhus Unit, From the Aboregine Hospital, Gombak and Veterinary Division).

Department to be set up 1967

23. School for Junior Laboratory Assistants
24. School for Medical Laboratory Technicians
25. Development of National Medical and Health Laboratory Services
26. Clinical Research Division
27. Rural Health Research Division
28. Cytology Division
29. Central Blood Transfusion Division
30. Acarology Division
31. Museum Division

By next year the I.M.R. will have 31 Divisions, each with its own Head of Division, usually a senior and experienced officer with are least 8 years specialized experience and possessing recognized post-graduate qualification. Heads of the divisions to be set up in 1967 have been nominated. They include Professor Lie Kiam Joo from the University of California, for the Rural Health Division, Dr. Puvan Singh who was trained in the Sheffield, England, Blood Transfusion Centre, Mr. Nadchatram for the Acarology Division and Mr. Lim Boo Liat for the Museum Division.

THE STAFF OF THE I.M.R.

Malaysian senior officers (with graduate and post-graduate qualifications)	30
Junior Staff (technicians, clerks, attendants etc.)	232
Foreign senior officers	14
Local Staff Sewing in US units (USAMRU and Hooper)	30
Total Staff	306

List of Senior Staff with their qualification

Administration

Director: Dr. Ungku Omar Ahmad M.B.B.S. D.Path. M.C.Path. M.I.Biol. Ph.D. (London).

Assistant-Director : Administration-vacant (an officer with M.B.B.S. qualification and 8 years experience in service will be posted on 1st October 1966).

Administrative Assistant: Mr. Yeow Yew Kheng (Super Scale C)

Personel Assistant to the Director: Mr. C. Fernandez (Super Scale)

Division of Bacteriology

Senior Bacteriologist: Dr. R. Bhagwan Singh M.B., B.S., D.T.M., M.C. Path. M.I.Biol., Ph.D. (Edinburgh)

Bacteriologists: Dr. (Mrs.) M.Lopes, M.B.B.S.
Mr. Abdul Wahab. B.Sc(Sydney)

Division Of Serology

Senior Officer: Dr. Lim Teong Wah M.B.B.S., M.C.Path. Dip. Bact. (Manchester)

Serologist: Dr. (Mrs.) Leong Wan Wah, M.B.B.S.

Division of Pathology

Colombo Plan Expert in Pathology: Professor J.B.Duguid M.D.(Durham)

Senior Pathologist :Dr. H.S. Ahluwalia, M.B.B.S.,
D.C.P.M.C. Path. (London)

Pathologist :Dr. J. T. Ponnampalam M.D. (Dublin)
Ch.B: B.A.C.; L.R.G.P.S., L.R.F.P.S.

Division of Biochemistry

Senior Biochemist :Dr. G.F.de Witt, B.Sc., A.R.I.C.,
Ph.D. (Edinburgh)

Biochemists :Dr. C. Fonseka, M.B.B.S.
Mr. J.R. Buttery.B.Sc.
Che Faridah Abdullah, B.Sc. (Adelaide)
Mr. Gooi Chek Meng, B.Sc. (London)

Division of Nutrition

Senior Nutrition Officer :Dr. Chong Yoon Hin, B.Sc. A.R.I.C.,
Ph.D. (London)

Nutrition Officers :Mrs. Ruth Lim Kwong Heng, B.Sc.(Ohio)
Mrs. Abu Bakar M.Sc. (New Zealand)

Division of Haematology

Senior Haematologist :Dr. (Miss) C.G.Lopez, M.B.B.S.,D.C.P.
London

:Dr. (Mrs.) Atienza Angeles M.D.
(Philippine)

Division of Virus Research

Senior Virus Research Officer :Dr. Lim Teong Wah, M.B.B.S; M.C.Path.
Dip.Bact. (Manchester)

(*Dr. Lim Teong Wah also officiates as
Head of the Serology and Vaccine
Production Units)

Virus Research Officers :Dr. (Mrs.) Dora Tan M.B.B.S. (trained
in the U.S.A.).

Dr. (Mrs.) Quan Siew Khin M.B.B.S.
(now on study leave at Melbourne,
Australia for Cytology).

Division of Medical Zoology

Zoologist	:	Mr. OwYang Chee Kong, B.Sc. M.I. Biol, D.A.P.& E. (now completing his Ph. D. in London)
Office-in-Charge	:	Mr. Lim Boo Liat

Finance

The allocation for the year 1966 is as follows:-

Malaysian Complement	$ 1,602,962/00
United State Army Unit	$ 500,000/00
Hooper Foundation	$ 200,000/00
Total	$ 2,302,962/00

(Malayan dollars two million, three hundred and two thousand, nine hundred and sixty two and cents nil only)

Note:- By signed agreement financial control of the above fund is vested in the hands of the Director, Institute for Medical Research, Malaysia. Thus all expenditure whether Malaysian, United State Army or the Hooper Foundation require the approval of the Director of the I.M.R.

Expenditure for the coming year particulaly on the Malaysian complement will be increased considerably as a number of development, research and training programmes have been agreed to by the Malaysian government.

Library

The present I.M.R. library contains 40,000 volumes, mainly journals. The whole building is being air-conditioned. Under the plan just approved, this library will be turned into the Central Library of the Medical Services of Malaysia. It will provide lending and bibliograph services for the staff working in the Institute as well as the Government hospitals in Malaysia

Faculty of Medicine, University of Malaysia, Kuala Lumpur

The Faculty of Medicine received its first student numbering 64 in May 1964. It will increase its intake by about 16 students per year until it achieves its target of 128 student a year.

The phased building programmed is actively going in and the various sections of the Medical Centre (in Faculty) will be completed a few weeks ahead of teaching in the respective years. The Teaching Hospital which was first scheduled to b operative by March this year will not in fact be ready until February next year.

As the building complex is being constructed a crash programme of staff training has been instituted. Many young medical graduates have been sent to various Universities abroad for training. They will ultimately for . the bulk of theteaching staff. In the meantime, reliance have to be made a number of academic staff from abroad.

Research and post-graduate training

The main concern at the moment is developmentof the undergraduate teaching curriculum. Plans are being made for future developments of research and post-graduate training.

Library

There are 11,000 volumes but space is provided to house 100,000 volumes. The present list contain 650 titles of journals.

Nursing and Medical Laboratory Technician Training

This has been referred to earlier in this report

Staff List

The present establishment is appended below:-

ACADEMIC STAFF
FACULTY OF MEDICINE, UNIVERSITY OF MALAYA
NORMAL APPOINTMENTS

Anaesthesiology:

Senior Lecturer	A. Ganendran, M.B., Ch.B., F.F.A., R.C.S., M.R.C.P. (Edin)

Anatomy:

Professor	W. Paillie, M.B.,B.S.,D.Phil.(Oxon)
Lecturer	A.P. Chakravorty, M.B.,B.S.,M.R.C.O.G.
Asst. Lecturers	J.G.K. Manuel, B.Sc., M.B.,B.S. A.F. Quay, M.B.,B.S.

Bacteriology:

Professor	(Vacant)
Lecturers	Chai Kim Hai, M.B.,B.S.Dip.Bact.
	V.Krishnapillai, B.Sc., M.B.,B.S.
	Lam Sai Kit, M.Sc.,Ph.D. (Canberra)
Asst.Lecturer	Ong Suat Bee, M.Sc.

Biochemistry:

Professor	Leong Peng Chong, Dip.Sc., Ph.D. (Cantab.)
Lecturers	E.P.M. Bhattathiry, M.Sc., Ph.D. (Nagpur)
	J.R. Candlish, B.Sc., Ph.D. (St. Andrews)
	N. Chandrasekharan, B.Sc., M.B.,B.S.
	Loke Kwong Hung, M.Sc., Ph.D. (Edin), A.R.I.C.
	Oo Khaik Cheang, B.Sc., Ph.D. (Otago)

Medicine:

Professor	T.J. Danaraj, M.D., F.R.C.P. (Edin)
Senior Lecturer	Wong Hee Ong, M.B.,B.S., M.R.A.C.P.,M.R.C.P.
Lexturers	N. Adiseshan, M.B.,B.S.,M.R.C.P.
	Chua Seong Siew, M.A., M.B., B.Chir., M.R.C.P. (London)

	Yujen Edward Hsia, B.A., B.M.B.Ch., M.R.C.P.,D.C.H.
	Ranjit Singh, M.B.,B.S., M.R.A.C.P.
	M. Somasundaram, M.B.,B.S.,M.D., M.R.C.P.

Obstertrics & Gynaecology:

Professor	Chan Pui-Chee, Donald, M.B.,B.S. D. Obst., R.C.O.G. M.M.A.S. (Lon), M.R.C.O.G.,F.R.C.S.
Lecturer	Chan Kok Chin, Lawrence, M.B.,B.S., D.Obst. R.C.O.G. (Lon),M.R.C.O.G.(Lon)

Ophthalmology:

Senior Lecturer	(Vacant)
Lecturer	Vincent Ooi Eu Sen, M.B.,B.S., D.O., F.R.C.S.I. F.R.C.S.

Radiology:

Senior Lecturer	(Vacant)

Social & Preventive Medicine:

Professor	W. Danaraj, L.M.S., M.P.H. (Harvard), D.C.H.
Visiting Professor	G.W. Gale, M.Sc., M.B.Ch.B., D.T.M.& Hy. D.P.H. (Edin)
Asst. Lecturer	(Mrs.) Lillian Lau, M.B.,B.S.

Surgery:

Professor	Yong Nen Khiong, M.D., F.R.C.S., F.A.C.S.
Lecturers	Foong Weng Cheong, M.B.,B.S.,F.R.C.S.
	Ong Siew Chey, M.D.
	Pai Soo Tong, L.M.S., Dr. Med., Ph.D. (Seoul)
	S. Velupillai, M.B.,B.S., F.R.C.S.

APPOINTMENTS MADE UNDER THE ACADEMIC STAFF AND TUTORSHIP TRAINING SCHEME

		Place of Training
ANAESTHESIOLOGY :	Dr. A.E. Delikan	St. Thomas' Hospital, London.
	Dr. A.I. Gurubatham	St. Thomas' Hospital, London.
	Dr. Lim Say Wan	Department of Anaesthesia, The University of Liverpool.
BACTERIOLOGY :	Dr. S.D. Ampalam	London School of Hygiene & Tropical Medicine, United Kingdom.
BIOCHEMISTRY :	Miss GanChong Yong	Department of Biochemistry, Faculty of Medicine, University of Malaya.
	Mr. Mohd. Ghazali Bin Abdul Rahman	Department of Biochemistry, University of Western Australia, Australia.
DERMATOLOGY :	Dr. Zainal Abidin Bin Sarih	St. John's Hospital for Diseases of the Skin, London
PATHOLOGY :	Dr. Beng Chay Giap	Department of Pathology, Texas Children's Hospital, Houston, Texas.
	Dr. Lim Kee Leong	(not yet placed)
	Dr. Tang Khai Yuen	Department of Morbid Anatomy Alfred Hospital, Melbourne, Australia.
PARASITOLOGY :	Miss Lowe Cheng Yee	London School of Hygiene & Tropical Medicine, United Kingdom.
PHARMACOLOGY :	Mr. Philip Chang Chong Sing	Department of Pharmacology, University of Melbourne, Australia.
	Miss Josphine Geh Sooi Lin	Department of Pharmacology Faculty of Medicine, University of Malaya.
	Miss Yeoh Peng Nam	Department of Pharmacology, Ohio State University, United States of America.

OPHTHALMOLOGY :	Dr. R.T. Rasanayagam	Institute of Ophthalmology London.
OTOLARYNGOLOGY:	Dr. Chee Choong Seng	Royal Melbourne Hospital, Melbourne, Australia.
	Dr. A. Gnanapragasam	Royal Melbourne Hospital, Melbourne, Australia.
RADIOLOGY :	Dr. Ang Ah Hoo	(not yet placed)
	Dr. Soo Yoi Sun	Radiology Department, Royal Free Hospital, London.

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APPENDICES

Some of material for writing this section

(1) Technique used for Developing Malaysia - Malaysian Government Publication.

(2) 50 years of Medical Research in Malaya - Institute of Medical Research Publication.

(3) Monthly Bulletin of Malayan Statistics Department- July 1966

(4) University of Malaya Medical Centre

(5) Medical Education in Malaysia - Proceeding of the conference in Medical Education held at the Faculty of Medicine, University of Malaya 3-6th August 1965.

(6) Malayan Official Year Book 1964 - Information Department, Malaysia.

(7) Current Serial Title - Medical Library Publication No 1 - University of Malaya

(8) Scientific Publications List No. 1/66 - Institute for Medical Research

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VIETNAM

VIETNAM

The entire SEAMES medical team arrived in Saigon at 1000 hours, 23 September 1966. At 1530 hours they were received by the Minister of Health, Dr. Nguyen Ba Kha. Following this the group were conducted on a tour of the new building of the University of Saigon Faculty of Medicine by the Dean, Dr. Pham Bieu Tam. At 1830 hours they were received by the Vice Prime Minister in charge of Cultural and Social Affairs, Dr. Nguyen Luu Vien.

On the morning of 24 September, the group were received by the Minister of Education, Mr. Nguyen Van Truong, and the Rector of the University, Professor Tran Quang De. Each of the officials indicated the desire of the government of Vietnam to participate in the program and the hope that a center would be located in Vietnam.

The group then visited the Pasteur Institute and were shown the various facilities by the Director, Dr. Nguyen Van Ai, and members of his staff. They briefly visited the School for Medical Laboratory Technicians and the Walter Reed jointly staffed plague and enteric units. At 1200 the group visited the Malaria Eradication Center. During the afternoon a visit was made to the Children's Hospital Nhi Dong. Discussions continued at dinner with Dr. Nguyen Ba Kha, Minister of Health.

The program which had been arranged for 26 September, which included visits to the Pasteur Institutes at Nha Trang and Dalat and the leprosarium at Ben San as well as to other medical installations in the Saigon area, had to be omitted because of the shortage of time available to the group.

The 25th and 26th were spent in arranging for transportation and in proceeding to Bangkok.

I. Medical Schools

A. The University of Saigon Faculty of Medicine.

This faculty was established in Hanoi in 1902, and a second component was opened in Saiton in 1947. In 1954 half of the Hanoi staff, students, and equipment moved to Saigon. The School in Saigon has been under Vietnamese administration since 1955. The present Basic Sciences Complex was occupied in September 1966 and is planned to accommodate 200 students in each of the six years of the curriculum. The premedical year may or may not be moved from the Faculty of Sciences to the Medical School proper.

There are approximately 190 students in each of the present six classes. Admission is by competitive examination. The final two years are considered as an internship. At the conclusion of the sixth year, the student may be employed in civil service or in the military. He cannot enter private practice until he has completed a thesis at which time the M.D. is awarded.

This is a government supported medical school and is now receiving assistance from USAID. Radioisotope and hematology laboratories deserve particular mention. The teaching staff consists of approximately one hundred professors, most of whom also have private practices.

French is the language with a section of this year's class being offered in English.

There are also faculties of Dentistry and Pharmacy.

B. The University of Hue Faculty of Medicine

This faculty was founded in 1959 and thus is about to graduate the first class this year. The size of the entering class is 60. The curriculum is similar to that of the school in Saigon.

This is considered to be a government supported school which is sponsored by the University of Freiburg. The size of the staff varies; but, in addition to Vietnamese teachers, there are visitors from Germany, France, and Canada.

Teaching is in Vietnamese, French, and English.

C. The University of Can Tho

Consideration is being given to establishing a medical school, and the initial steps have been taken to establish several university faculties this year.

II. Related Organizations

A. The Pasteur Institute (Saigon) with branches at Nha Trang and Dalat was established in 1890 by Calmette. It is an autonomous organization receiving a subsidy from the Ministry of Health and also deriving income from the sale of vaccines and sera.

The missions include:

1. Research and study of communicable diseases and of venoms.
2. Production of vaccines and sera (for both human and animal use).
3. To assist in the teaching programs of the universities and to prepare graduate students for the directorship of clinical laboratories.

The staff includes 19 professionals, 123 technicians, and a large number of administrative and supporting workers. There are laboratories of human microbiology, animal microbiology, parasitology, biochemistry, histopathology, virology, food control, and water examination. Laboratories for the study of plague and of enteric disease are operated jointly with the Walter Reed Army Medical Team (Vietnam). Serum and vaccine production is handled at Nha Trang and Dalat.

The Institute performs a large service function. Examples for Saigon only during 1963 include:

Microbiology	46,022	examinations
Microbiology (animal)	1,083	examinations
Biochemistry	12,868	examinations
Histopathology	2,574	examinations
Leprosy patients	8,955	
Rabies consultations	11,671	
Plague vaccine prepared	652,750	ml
Food control	5,000	examinations
Plague vaccine issued	1,839,000	ml
Cholera vaccine issued	6,429,000	ml
Small pox vaccine issued	8,000,000	doses
Diphtheria & Tetanus vaccine issued	676,000	doses

Specific research projects include:

1. Studies on melioidosis
2. Studies on pathogenic enteric bacteria (Salmonella, Shigella, Escherichia)
3. Parasitology
    a. Studies on helminths
    b. Studies on the **life** cycle of a new species, Seuratum nguyenvanaii

4. Inventory of the Anopheles of South Vietnam
5. Studies on the resistance of mosquitoes to insecticides
6. Studies to evaluate when a cure of leprosy has been attained
7. Studies on the nutritive values and the chemical composition of traditional foods of Vietnam
8. Evaluation of viable lyophilized plague vaccine (with Walter Reed Army Institute of Research)

B. Walter Reed Army Research Team

A small group established in 1963. located adjacent to the Pasteur Institute. Major joint interests have been in plague and in enteric diseases. Interest extends to all problems of military interest. This group is augmented by teams from the Walter Reed Army Institute of Research, as required.

C. Malaria Eradication Center

Established 1958 (?) in association with WHO and USAID. Primarily concerned with surveys of patients and of vectors and with control measures by chemical and environmental means. Primary effort has been in the heavily populated coastal area extending north from above Saigon.

D. Laboratory for Nutrition Research

This unit was established several years ago. The size of the staff and the status of the current program is not available.

E. Commission for Atomic Energy (Dalat) is engaged in research under Professor Le Van Thoi and provides radio-active materials for medical purposes.

III. Paramedical Personnel (Ministry of Health)

A. Medical laboratory technicians. A two-year course is given by the Ecole Nationale de Biologie Medicale. The average class size is 35 per year. Admission is by competitive examination after completion of their baccalaureate. There is a staff of approximately ten.

B. Medical Assistants Schools. (Saigon and Hue) Established in 1956. A three-year course is given with emphasis on preventive medicine. These are intended to work at district and hamlet level. Class size is 60.

C. There are National Schools of Nursing and of Midwifery at Saigon and Hue, dating from 1957.

IV. The Faculty of Sciences of the University of Saigon has a Department of Zoology, and the Faculty of Pharmacy has Departments of Microbiology and of Parasitology.

V. The Pasteur Institute has 5,000 text books, 10,000 reviews and periodicals, and 6,000 reprints (some on microfilm). Sixty-six journals are received regularly by subscription and 203 by exchange. The Faculty of Medicine has 20,000 volumes, and 282 periodicals are received. Holdings are mainly in English and French.

VI. Animal facilities in the Pasteur Institute in Saigon in 1963 produced 1,384 guinea pigs and 8,200 mice. Large animals are maintained in Nha Trang.

VII. There is a school for "Forestry, Agriculture, and Veterinary" students in Saigon. It dates from about 1941 and is of three years' duration. There is specialization during the last year. There is an associated Veterinary Microbiology Institute, which does diagnostic work and produces some biologicals.

VIII. Acta Medica Vietnamica

Bulletin Du Syndicat Des Medecins Du Vietnam

Annales De L'Institut Du Cancer Du Vietnam

Revue De L'Ecole De Sante Militaire Du Vietnam

Rapport Annuel Sur Le Fonctionnement Technique De L'Institut Pasteur (In French or English with some Vietnamese)

IX. Histology is performed by the Pasteur Institute for outlying hospitals.

The Department of Pathology of the Faculty of Medicine does service work for the teaching hospitals.

The Pasteur Institute is the reference laboratory for microbiology in Vietnam.

There is a shortage of technical and semi-skilled labor.

X. For undergraduate in Saigon-Giadinh-Cholon area:

Binh Dan Hospital	400 beds
Cho Ray Hospital	1,100 beds
Nguyen Van Hoc Hospital	
Childrens Hospital	250 beds
Hong Bang Hospital (TB hospital)	420 beds

Cho Quang Hospital (infectious & Mental diseases)	534 beds
Do Thanh Hospital	
Tu Du and Hung Vuong Maternity Hospital	560 beds

These are jointly staffed by personnel from the Faculty of Medicine and from the Ministry of Public Health. Records of the Faculty of Medicine services are in French while the remainder is in Vietnamese. Autopsy percentage in these teaching hospitals is about 20 per cent.

Rural Health Installations as of 1965:

Districts:	Hospital	163
	Dispensary	2221
	Maternity	196
Villages:	Dispensary	260
	Maternity	597
	Infirmary (?)	4000
	Mobile med unit (?)	101

There are no physicians in the above listed units except in those near to the cities. Staff is mainly from personnel noted in para III. Each province has at least one hospital, planned to provide definitive medical care. Under the present wartime conditions, access to certain of these rural facilities is limited.

Foreign nationals with a medical degree are permitted to work in government hospitals and, in special cases, are permitted to have private practice. Foreign national medical teams are located in many of the provincial hospitals.

XI. At the present time the costs in Saigon of construction are comparable to other SEA countries. There are no governmental facilities available for visiting staff or students, and the provision of such facilities would be necessary as would buildings to support the proposed research and educational effort. Land for such units is available. Individual scientific workers could be accommodated in present laboratory facilities.

The study of tropical medicine in Vietnam should be conducted jointly with the Pasteur Institute and the Faculty of Medicine of the University of Saigon. Vietnam offers access to a variety of diseases, including filariasis, drug resistant malaria, endemic and epidemic plague, helminthic infections, nutritional deficiencies, leprosy, and numerous enteric infections.

NGUYEN HUU

NGUYEN VAN AI

Appendices

1. Rapport Annuel sur le Functionnement Technique (Institute Pasteur de Vietnam) 1963 (includes staff listing)

2. Health Statistics - Vietnam 1963

3. Bulletin Analytique, Medecine et Sciences Affilices, Vol. 1: 1942 - 1962.

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Bangkok, Sept. 24, 1966

Dr. Kaw Swasdi Panich
SEAMES Director
Bangkok, Thailand

Subject: Report of SEAMES Task Force on Agriculture

Dear Dr. Kaw:

I have been requested by the other members of the Task Force on Agriculture to write on their behalf this covering letter in the submission of our report for the consideration of the SEAMES authoritative. This is due to the fact that I am the only member of the Force that covered the full period of assignment.

We have endeavoured to fulfill our assignment as fully and completely as possible within the short space of time given. We do not regard our report an authorative document. Nevertheless, we feel we have contributed some substance which we have been assigned to produce as a logical follow-up of the Kuala Lumpur Workshop. We sincerely hope that the SEAMES authorities will find our report useful to plan on the next phase of this project.

The report is a joint effort of all the members of the Task Force.

Sincerely yours,

Chew Hong Jung
Malaysia's Representative
on behalf of
Members of the Task Force

cc: USOM/Bangkok

REPORT OF SEAMS TASK FORCE ON AGRICULTURE

I. SUMMARY

1. The task force on an Institute for graduate* education and research in agriculture was made up of representatives of Thailand, the Republic of the Philippines, Malaysia and Viet Nam, accompanied by one Consultant from the Rockefeller Foundation (India) and one from Cornell University.

2. The task force was given two basic assignments:

a) To determine which of two Southeast Asian institutions (Kasetsart University in Thailand or the Los Banos Units of the University of the Philippines) should be recommended as a site for the Institute and,

b) To recommend terms of reference which would define the administrative and operational framework for the Institute and its relationship to the host University with which it is to be associated.

3. The task force gathered information on which its judgements are based by visiting each of the two universities (two days in Los Banos and three at Kasetsart) with the following objectives in mind:

a) To discuss with administrative officials, faculty, graduate students and scientists in associated research units the graduate education and research program of the Institution.

b) To visit briefly their graduate education and research facilities.

c) To gather pertinent statistics relating to the total institutions and their programs, with special reference to their graduate education and research programs.

d) To obtain their advice as to the operational frame work, size, scope and budget requirement for the proposed Institute.

4. The following pertinent criteria were used in evaluating the comparative graduate education and research programs of the two institutions.

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* Throughout this report the term "graduate education" refers to study beyond that for the B.S. degree. It includes study for both the M.S. and Ph.D. degrees.

a) The academic training and competency of the faculty for graduate education and research and their likely improvement in the near future.

b) Facilities currently used for graduate research and education and those likely to be available in the near future.

c) The size of the current graduate education and research program and the extent and nature of past experience in graduate training.

d) Contributions of associated research institutes to the graduate training program.

e) Library facilities and holdings relating directly to research and graduate study.

f) Relationship between language of instruction and ease of graduate teaching.

5. The decision as to which University should be recommended as a site for the Institute was not an easy one. Each of the two universities has qualities of which it can be proud. Each presents evidence of significant progress in recent years.

6. After careful and due consideration the task force is of the opinion that the Los Banos Units of the University of the Philippines represent the more favorable site for the proposed institute. This opinion is based on the following factors:

a) The number of its faculty trained to the Ph.D. Level.

b) The impressive number of its faculty now undergoing overseas Ph.D. and M.S. training.

c) The size and quality of its current research and graduate education program.

d) Its longer experience in graduate education, and the traditions which have been established toward recognition of research and graduate education as integral part of the institution's basic responsibilities.

e) The ambitious World Bank-supported facility construction program, which emphasizes graduate education and research and

f) The contributions which associated research units are now making and will likely continue to make to graduate education and research.

7. The suggested terms of reference for the new Institute embody two major features.

a) An international graduate education and research program with distinct identity and with objectives which relate to meeting the needs of the SEAMES countries.

b) A true partnership between the Institute and the host institution (UPCA) which takes advantage of the strengths of each to provide quality graduate instruction and research.

8. The suggested administration and operation of the graduate education and research program fostered under this regional cooperative program involves three components.

a) A Council including representatives of each of the participating countries to set general policy guidelines and to provide a periodic review of the progress and accomplishments of the Institute.

b) A director who shall have administrative responsibility for the program and who shall work cooperatively with the head of the host institution on matters of joint concern such as staff and student recruitment and selection, and maintenance and improvement of program quality.

c) The head of the host institution who shall have major responsibility for academic and research quality and shall participate jointly with the Director in staff and student recruitment and selection.

9. It is expected that forty M.S. candidates would enroll in the SEAMES graduate education program the first year. This number would increase to 200 by the 5th year and could expand to 300 or more in time. Candidates for the Ph.D. degree would be expected to start in about the 6th year. By the 10th year combined M.S. and Ph.D. candidates would number at least 250. Participation by member countries would be on a quota basis set up by the Council.

10. It is suggested that instruction and research guidance for the SEAMES graduate students would be on the basis of a 6.7 to 1 student to faculty ratio. Two-thirds of the extra faculty requirement for these students would be met by 20-25 new SEAMES professors. The other third would be furnished by existing faculty of UPCA who would, in turn, be furnished additional technicians and assistance to partially compensate for their contribution.

11. New SEAMES faculty positions would be in one of two catefories:

a) Tenure faculty whose appointment and salary normally would be in the range provided for other University of the Philippines staff.

b) Visiting professors whose appointment and salary would be sufficiently high to attract them to the SEAMES Institute program for 1-3 year assignments.

12. In general SEAMES faculty would be selected on an international basis, with priority being given to member country scientists if their qualifications meet those prescribed for the openings in question. Selection would not be limited to personnel from these countries and the non-tenure visiting professors, in particular, would be expected to be recruited from among the best obtainable throughout the world.

13. New facilities required to accommodate the additional staff and students in the Institute program along with their anticipated costs are as follows:

a) Staff Housing	$ 432,000
b) Student Housing	925,000
c) Research and graduate teaching facilities	4,220,000

14. Operating costs are estimated to amount to approximately $5,000 per student year, including the costs for travel and scholarship stipend, or $1,000,000 annually by the 5th year and $ 1,250,000 by the 10th year. Should the number of students increase at a more rapid rate than anticipated, costs would be proportionally higher.

15. Members of the Task Force suggest to SEAMES that they should meet a second time to draw up the Plan of Operation of the proposed institute, should this report be accepted.

II. Introduction & General Terms of Reference for the Proposed Institute

The Task Force was set up with the following terms of reference as contained in Paper SEAMES/TF/3:-

a) Determine the contribution to be made by the host country.

b) Study the adequacy of existing facilities for the project in the host country.

c) In consultation with the host country, determine the nature of the relationship between the proposed Regional Institute and the existing natioanl institution.

d) Devise a phased program of development for the first two five-year periods of operation.

e) Estimate the costs of development of the Institute during the first five years and indicate the magnitude and sources of finance.

2. In addition to the above quoted terms of reference the Task Force took on for guidance the Kuala Lumpur Workshop Report on the proposed institute also. Of particular significance in the Kuala Lumpur Report is the quotation appended below:

"The Group studied the proposal for siting the Institute in the Philippines and also received a verbal bid for locating the institute in Thailand while there was agreement on the need for the institute. The Working Group could not decide on the site in view of the desire of Thailand to be considered as a possible location for the Institute. Accordingly, the Working Group recommended that a Committee to study the matter more intensively be appointed and to make specific recommendations as to the site of the proposed institute ...."

This procedure was adopted to add more breadth and depth to terms of reference and to cover the subject over a wider horizon where pertinent and relevant. In this report, the Task Force considered reference to the Kuala Lumpur report essential in view of the importance of the assignment and the hearing its (Task Force) suggestions and recommendations have on the implementation and subsequent operation of the Institute.

3. The Task Force gave wide interpretation to the first term of reference and understood it to cover contribution of the host country in the vital triumvirate - man, money and material - and other aspects of associated contributions considered to be of value to the establishment of the proposed Regional Training Institute. Both the Philippines and Thailand indicated to the Task Force their respective contributions to the project in terms of graduate education and research facilities.. For ease of reference, and evaluation such information as gathered in discussions or submitted in documents has been distributed under the appropriate sections of this report or reproduced as appendices.

4. In evaluating and assessing the contribution of the host country, the Task Force gave cognizance of the major objectives as contained in the Kuala Lumpur report. It was, therefore, the primary considered opinion of the Task Force that the proposed Institute, regardless of where it is to be located, must be

international in character, stature and status.

5. Based on this consideration the Task Force made a quick and brief study of the existing and future facilities offered at the Los Banos complex and the Kasetsart campus. Two days were spent at Los Banos and 3 days at Kasetsart. With the short space of time at the disposal of the Task Force and the wide field to cover, it was impossible to study or inspect the facilities with any degree of thoroughness. A bird's eye view of the existing facilities at both campuses was all that the Task Force was able to have or scheduled to have.

6. In addition to the collection of pertinent statistical data, visits to laboratories, lecture and library halls and field stations of the university proper, studies were made on associated institutes, organizations and agencies which were considered to lend themselves to the graduate training and research program of the proposed Institute. Discussions were held with visiting professors and scientists interested or likely to be associated with the project. Graduate students currently engaged in research for Ph.D. or M.Sc. degrees were interviewed also. The schedules of visits and list of persons interviewed in connection with the project are in Appendix I(c) and Appendix I(d) of this report.

7. The Task Force was favorably impressed with certain facilities available at Los Banos and Kasetsart and was of the opinion that a modest start on the proposed graduate training and research program could be made at either campus. The criteria on which the Task Force has based its appraisal and evaluation on the feasibility of establishing the proposed Institute and the comparison of the criteria of the two host institutions in regard to the graduate program are dealt with in detail elsewhere in the report.

8. Regardless in which campus the proposed Regional Institute is to be sited, it was the unanimous opinion of the Task Force members that the Institute must be international in character, participation and set up. This must be clearly spelled out first and foremost in the memorandum of understanding between SEAMES and the host country before any steps should be taken in the physical establishment of the Institute. For long-term operation and international participation of the Institute, affiliate institutions may be set up in member countries to widen the scope of the graduate training program, for example, graduate research in rubber and oil palm may be undertaken in Malaysia under the supervision of competent scientists in that country.

9. Whilst every encouragement and co-operation should be made to establish a close liaison with the home institution it (the Institute) must never be allowed to lose its international identity. It should

be appreciated, however, that in the early years of its development, the Institute is expected to lean heavily on the existing facilities and professional and technical assistance of the home institution. Notwithstanding this essential reliance, its position as an international and independent graduate school must be zealously guarded by the administrators of the Institute. To allow the Institute to be regarded as a graduate school of the host institution at any stage of its development will doom itself to mediocrity. It will never achieve the noble objectives expected of it. Representative of the host countries with whom members of the Task Force discussed and expounded this view accepted the stand of the Task Force on the position of the proposed Institute and the international commitments expected of the national institution and the host country.

10. The Task Force was favorably impressed with the long-term expansion program of Los Banos and Kasetsart also. Briefing and documents of the expansion program were presented to the Force. Selected data of the programming of both universities are found in the Appendix II of the report. Briefly the current Five-Year Development Program at Los Banos is estimated to cost 46.1 million pesos (US $ 12.1 million) before the proposed Regional Institute was put up for consideration by SEAMES member countries. A supplementary development program of 34.3 million pesos (US $ 9.3 million) to strengthen the position of Los Banos as the possible site of the Institute has since been submitted to the Task Force for consideration.

11. Existing, laboratory and field and other campus facilities at Kasetsart University were considered to be of amore adequate level than those seen and visited by the Task Force at Los Banos despite the small graduate research program undertaken at present. The small size of the graduate research and teaching program was (as explained) due to policy and other matters. There is no reason why existing facilities should not be more fully utilized for graduate training and research.

12. An equally impressive development program has also been drawn up to improve and expand the present Kasetsart campus or to establish a new campus 80 kilometers from Bangkok. The estimated costs of development are in the region of Tcs. 600 million (US $ 30 million) for the present site or Tcs. 430 million (US $ 21.5 million) for the new site. With the strengthening of the academic staff both in academic standing and in numbers the Kasetsart campus should be in a more favorable position to offer adequate and accepted facilities to cater for expanded graduate training and research in a wider range of disciplines.

13. Bearing in mind the international status and academic standing that the proposed Regional Institute should attain and maintain, the Task Force found it difficult to give reliable estimated costs of

developing the Institute and, more difficult still, to indicate the sources of finance. In studying the estimates proposals put up by Los Banos and Kasetsart, the Task Force viewed with a fair degree of satisfaction that the financial requirements as put up by the two universities should be adequate and reasonable to start off the program in developing the Institute. The Task Force was of the opinion that it would take more than one five-year program to attain the international status expected of the Institute. With this view in mind the Task Force has set itself to consider a two five-year program. The size and scope of the Institute and the estimated costs of its development and operation are contained in section IV of the report.

14. Apart from contractual commitments of capital and recurrent expenditure expected of the host government to the Institute, the Task Force was in no position to indicate the sources of finance and considered not its (the Force) responsibility to indicate the size and extent which member countries should commit themselves to the Institute. However, the Task Force took due notice of the suggestions on the financing of the Institute as contained in the Kuala Lumpur Report and to record its (the Force) endorsement that the financing of the Institute should be partly by proportionate contributions from participating countries and partly by outside contributions.

15. While still on finance, it is the view of the Task Force that member countries may be reluctant to contribute its proportionate contributions to the Institute unless it has proved its worth. Examples of the ineffective operation of institutions set up to cater for international requirement in certain areas of discipline were brought to the attention of the Task Force. Mindful of this possibility it is appropriate for the Task Force to suggest that the initial capital and running costs of the Institution should be supplied by international agencies.

16. The same can be said for the participation in the graduate program of the proposed Institute. In reply to the Task Force question on the size of the graduate program Los Banos has indicated a total intake of 500 graduate students, 200 of whom were meant for member countries. Kasetsart could accommodate 450 at a given time and suggested that there should be a quota admission for member countries depending on the amount of proportionate contribution and the need of member countries.

17. The Task Force dealt at length with the question of graduate student participation and because of the complexities involved. the following observations are presented:

a) Wherever possible, member countries should be encouraged to send their graduate students to the Institute for training in those fields of discipline in which the standard of the institute is comparable to other internationally recognised institutions.

b) SEAMES should award adequate graduate scholarships of sufficient attraction and incentive to member countries as a launching pad for the graduate program.

c) Council of the Institute should decide on the participation of graduate students on a quota basis if considered appropriate. However, it was felt that the quota system would not arise and the Institute should not be confronted with an "empty house" problem if the standard of the graduate program is internationally recognized and that research disciplines offered are suitable and meet with the requirements of member countries.

18. The Task Force also considered the Kuala Lumpur Report on the Organization and staffing of the Institute. The following are some of the views of the Force:-

a) The Institute should be international in character and should be managed by a Council of Directors or Council of Administrators with full authority to decide on the policies of the Institute. It is considered that the role of Advisory Council as suggested in the Kuala Lumpur Report lacks the essential powers and authority to develop and operate the Institute. Membership of the Council should be the same as those suggested for the Advisory Council in the Kuala Lumpur Report.

b) The Director of the Institute should be responsible to the Council in the overall administration of the graduate program. This key man must be an expert agriculturalist with experience in agricultural education, particularly in graduate training. He should have the required college administrative experience also. To this key man will be entrusted the operation of the graduate program, recruitment of staff, selection of graduate students and the maintenance and improvement of the academic standard of the whole graduate program of the Institute. He is expected to liaise and work closely with the head of the host institution.

The Task Force was of the opinion that this job is not meant for a civil service type of administrator. It is also felt that the head of host institution should not be the Director of the Institute in a dual position because such type of appointment will not do full justice to both the institute and the host institution. The institute must have a full time Director if it is to operate efficiently. The attention of SEAMES is drawn to these two important considerations.

Instead of a deputy director there should be an assistant to the Director who will assist the Director in the day to day administration of scholarships and the progress of the graduate program.

c) The academic standing of the Institute and its graduate program depend entirely on the quality of the staff. The staffing of the Institute with men of the required calibre cannot be overemphasised. The staff of the Institute should be identified as SEAMES staff as distinct from the staff of the host institution. Recruitment of SEAMES staff must be on an international basis and the terms and conditions of service attractive enough to draw high quality brain power as recommended in the Kuala Lumpur Report.

III. The Selection of the Site

a) Criteria applied

1) Academic training and competency of the faculty for undertaking and carrying out a successful graduate education and research program.

A well trained, highly competent staff is absolutely essential for this program and must be assured before the project can be undertaken. In order to be eligible for membership on the graduate faculty, each person concerned should have demonstrated his capacity for independent intellectual inquiry in his special field and for stimulating intellectual curiosity in his students and developing their talents for independent study and research. Graduate faculty members should have themselves attained graduate degrees, preferably the highest degree (or Ph.D.) and should have a record of productive scholarship as indicated by published original research.

In this study, the team summarized the academic training of the staff of each institution in terms of the numbers of staff by fields of concentration, who had attained the Ph.D., M.S., and B.S. degrees, respectively and the numbers now engaged in studies leading to the advanced degrees. Following is the comparative position:-

Present Position	Members of Staff Members with degrees of		
	Ph.D.	M.S.	B.S.
College of Agriculture, Los Banos -			
Full time faculty	62	107	228
Associated Institutions (Part time)	36	10	8
Total	98	117	236
Kasetsart University -			
Full time faculty	23	116	144
Associated Institutions (Part time)	32	35	38
Total	55	151	182

	FOR	
	Ph.D.	M.S.
Staff on leave for post graduate study -		
College of Agri., Los Banos -		
- abroad	73	45
- local	3	103
Kasetsart University		
- abroad	13	5
- local	-	18

2. Facilities - Present and in Prospect

Facilities considered important in this program include hostels and other living facilities and amenities for students and staff, classroom and laboratory buildings, research and teaching equipment, libraries, including collections of the most important journals reporting research contributions, land suitable for field experimental work easily accessible to the campus, and animals.

Although task force inspected both institutions as thoroughly as time permitted, we could only judge the relative position on facilities in a general and qualitative fashion. At present, the quality and adequacy of classroom and laboratory buildings and their maintenance and upkeep appears to be definitely superior at Kasetsart University. However, the very extensive building and development program underway at Los Banos under the program being financed jointly by the World Bank loan and the Philippines government should put Los Banos in a position to compare quite favorably. The Rector at Kasetsart informed the task force of extensive expansion being contemplated and indicates that a decision will be made soon as to whether this will take place on the present site or elsewhere.

Both instituions are critically short of land for field experimental work at or near the headquarters campus and will have to give urgent attention to making up this deficiency.

Library facilities will need careful attention at either campus. The libraries at Los Banos, with its associated institutions, would seem to have somewhat more tells, especially of the relevant serial publications, although the documentation center on the Kasetsart campus is developing, with UNESCO cooperation, excellent facilities and should be a distinct asset.

While deficiencies in facilities would have to be filled in on either campus to accomodate a regional post graduate program, this would not appear to be an insurmountable problem at either location.

3. Size of current graduate educational research program and post experience in graduate education.

A successful graduate program involves a combination and intimate integration of research and educational functions and a tradition of research as an integral and very significant part of the functions and responsibility of the institution and its staff. Graduate education is developed with a highly selected and specially qualified group of students, and goes much deeper and requires a different approach from that usually taken for undergraduate instruction. The present graduate enrolments at the two institutions is reported as follows:

Los Banos -----------	283
Kasesart -----------	79

The students at Los Banos are in all departments of the college of Agriculture while approximately 85% of those at Kasetsart are in the social sciences (Economics and Agricultural Economics). As far as instruction goes Kasetsart is, up to the present, essentially an undergraduate institution. A total of ten M.S. degrees have been awarded since 1956. In this respect, Los Banos has a decided lead in experience and tradition at the graduate level.

Support of research, through the university proper, and not including that done by associated institutions, or supported by special grants is reported as follows:

	Current Budget for Research	
	Social Currency	Dollar Equivalent
Los Banos	₱ 1,091,000 pesos	$ 280,000
Kasetsart	1,700,000 baht (including 300,000 from National Research Council)	$ 85,000

4. Contributions of associated research institutes

This can be assessed only in a general and qualitative way. The contributions in terms of numbers of individuals associated with the faculty has already been given. At Los Banos, the following institutes or organizations are currently located on or adjacent to the campus and are actively involved in cooperative graduate research and teaching programs:

The International Rice Research Institute

The Dairy Training and Research Institute

The Regional Center for Agricultural Credit
and Cooperatives in Asia and the Far East

The Forest Research Institute

The Forest Products Laboratory

The University of Philippines - Cornell Program.

At Kasetsart, the following are located in or adjacent to the campus and, while not now engaged to any great extent in graduate programs, are potential sources of cooperative work in this field:

The Department of Rice Research Laboratory

The Department of Agriculture Research Laboratory

The Thai National Documentation Center

The Applied Scientific Research Corporation of India

The Department of Livestock Development

The National Atomic Energy Agency (Reaction and Laboratories)

5. Language of Instruction

The medium of instruction at the undergraduate level at Kasetsart University is Thai. Graduate courses are being developed in the medium of English.

At Lso Banos, the medium of instruction at both undergraduate and graduate level is English.

A major portion of the scientific literature which will be available in the library, especially in the serial journals, will be in English.

It is recognized that there will be a language problem for a substantial number of the students from cooperating countries and that this will require special attention. The inclusion of an intensive English teaching laboratory as an integral part of the project is recognized as essential.

Many students will be admitted without adequate preparation in some subjects and will require course work at the undergraduate level to make up these deficiencies. Since a high degree of proficiency in English will be required of all students for availing of the graduate instruction as well as access to the literature, undergraduate instruction in English would be a distinct advantage to this program.

Summary

Taking the above factors into consideration, the Task Force concludes that the Regional Study and Research Institute should be located with the College of Agriculture at Los Banos, The Philippines.

In arriving at this conclusion, the task force has recognized the advantages of Los Banos in:

1. Academic training of the staff, including the present intensified program of upgrading of staff training.

2. The experience and traditions of graduate training and research among the various departments of the college.

3. The very substantial participation and contribution to graduate training and research by certain of the associated institutions, and

4. The language of instruction.

It is anticipated that Kasetsart University will progress rapidly in upgrading the training of its staff, increasing the research involvement of the institution, and in further strengthening of its cooperation in research and graduate training with the associated institutions on or near its campus, and will develop high quality graduate study programs in the various fields of agriculture and its related science. As this is accomplished, it will no doubt attract graduate students both from within Thailand and from other countries of the region.

Although the terms of reference of the Task Force do not specify the selection of the site for the Regional Institute, it is the opinion of the Force that SEAMES should be guided on this decision as based on the views of the Working Group of the Kuala Lumpur Workshop - see paragraph 2 of section II of this report.

For the sake of continuity of the work of the Task Force there should be a second meeting of the Force members to prepare a plan of operation for the establishment of the Regional Institute.

IV. Scope, Size and Budget for the Proposed Institute

After the task force decided to recommend the Los Banos complex of the university of the Philippines as the site of the proposed institute, it was then felt that the scope, size and budget could be determined.

The scope of graduate work would include study programs leading to the master's and doctorate degrees, in the various areas of agricultural science and technology. Research would include graduate thesis, staff research and cooperative research studies undertaken by graduate students, staff and some other cooperating individuals and entities not only in the host country but also in other countries in the region. The size of the venture, in terms of the expected number of the graduate student participants and the staff is shown in table 1. A 10-year period of development was considered as adequate span of time to reach projected numbers of graduate students and staff members of 250 and 27, respectively. In the first 5 years, most, if not all of the student participants will be pursuing the master's degree. It does not mean, however, that if qualified doctoral candidates will be available, they will not be included. It is the intention that doctoral candidates will be included if qualified candidates are available for work in areas that are adequately serviced by staff and facilities. From the 6th year on, 10 new doctoral candidates are included every year. At the 10th year of the program there will be 200 graduate students working for the master's degree and 50, for the doctorate degree. It is expected that after 10 years the Institute will have gained considerable strength to enable it to accomodate 50 more master's degree candidates and 25, doctorate degree candidates.

In developing the staff of the institute, it is assumed that approximately one-third of the instruction and guidance of the SEAMES graduate students will be given by the current faculty of the host institution with some additional laboratory and classroom assistance. The staff of the institute is estimated to reach at the 10th year a full completion of 27 members including a director, an assistant to the director, 17 tenure professors and 8 visiting professors. A tenure professor serves at the institute for a relatively long period of time and becomes a regular staff member. A visiting professor serves for periods anywhere from less than one year to three years. It is the opinion of the task force that the staff would be distinctly international, drawing into its membership the best available professors from the SEAMES countries and perhaps, particularly in the case of the visiting professors, from any country in the world. The task force views with great concern the necessity for getting the best staff available in order that the institute may gain recognition and prestige which enable it to attract the best quality students from the member countries. It is suggested that the director will be selected by the council from the nominees of the SEAMES countries and the professors, by the director, the head of the host institution and a third party which has "no axe to grind."

Also shown in table 1 is the schedule for providing staff houses and dormitory quarters for the graduate students. The schedule indicates adequacy of quarters as the graduate students and staff members grow in number. At the 10th year of the program, it is expected that there will be 27 houses for the staff, 75 apartments for married graduate students, and 2 dormitories with a combined capacity of 180 single graduate students.

Table 2. shows the additional facilities needed by the Los Banos units to adequately support the additional graduate student group and staff. Aside from the staff houses and dormitories, the indicated facilities such as library, land, buildings and equipment are extremely necessary to be constructed because these will be required by the additional 250 graduate student participants and 27 additional staff members. The completion dates are indicated. It should be noted that construction of the staff houses and the apartments and dormitories is to begin before the actual inception of the graduate program. The table also shows the unit costs of the additional buildings and facilities.

Table 3 shows the distribution of costs between the first 5-year period of the houses and facilities. It is estimated that in the first 5-year period, a capital investment of $ 5,347,000 is necessary, and in the second 5-year period, only $ 230,000 making a total investment of $ 5,577,000. It is felt that the amount is a fairly conservative estimate. Except for the specified items of equipment and machinery, the construction materials and other facilities are presumed to be available in the host country and other SEAMES countries and there would be a minimum of additional expense items such as freight and taxes. It is expected that taxes levied on imported commodities would be waived by special arrangements agreed upon by SEAMES countries.

Table 4, 5, and 6, provide the bases for an estimate of the total recurring costs. Estimates per student-year for both single and married students are given in table 4. The average cost per student year is $ 2,139. For a full-blown program involving 250 students, the total costs would amount to $ 534,750 per year.

The costs for the faculty, assuming a full complement of the staff is $ 372,650 a year, as shown in table 5.

Table 6, shows the additional costs to the host institution to carry on this program. A total amount of $ 260,000 is estimated.

A full-blown program would require recurring costs per year amounting to $ 1,207,400.

If all other costs for a student-year were added, the average of $2139 per student-year would go up to approximately $ 5000, which is definitely much less than the $8000 per student-year reported average in the United States and some European countries.

The task force feels that it is not within its charge to indicate the sources of funds for the capital investments or for the recurring costs. However, we are of the opinion that the worldwide benefits which might accrue from this venture would justify sizeable contributions from foundations as well as countries in the more developed areas. Even so, it is hoped that the SEAMES countries would commit themselves to support the institute to the full extent of their capabilities.

Table 1. **PROPOSED STUDENT AND STAFF NUMBERS IN SEAMES GRADUATE EDUCATION PROGRAM**

	YEAR OF PROGRAM									
	1	2	3	4	5	6	7	8	9	10
					STUDENTS					
M.S. Graduate Students 1st Year	40	60	80	100	100	100	100	100	100	100
2nd Year	-	40	60	80	100	100	100	100	100	100
Ph.D.						10	20	30	40	50
Total	40	100	140	180	200	210	220	230	240	250
					STAFF 1/					
Director	1	1	1	1	1	1	1	1	1	1
Asst. to Director	-	-	-	1	1	1	1	1	1	1
Tenure	4	7	10	12	14	14	15	16	16	17
Visiting	-	3	4	6	6	7	7	7	8	8
Total	5	11	15	20	22	23	24	25	26	27
					FACILITIES NEEDED 2/					
Staff Houses	5	(5)+6	(11)+4	(15)+5	(20)+2	(22)+1	(23)+1	(24)+1	(25)+1	(26)+1
Graduate (Married)	10	(10)+15	(25)+10	(35)+10	(45)+5	(50)+5	(55)+5	(60)+5	(65)+5	(70)+5
" (Single)	30	(30)+45	(75)+30	(105)+30	(135)+15	(150)+5	(155)+5	(160)+5	(165)+5	(170)+5

1/ Assumes approximately one-third of the instruction and guidance of SEAMES graduate students to be given by current host country faculty with some additional laboratory and classroom assistance.

2/ Figure in parentheses represents available number from previous year.

Table 2. Facilities Construction Schedule (Dates of Completion)

Unit	Year of Program										
	-1	1	2	3	4	5	6	7	8	9	10
Staff Houses	5	6	4	5	2	1	1	1	1	1	-
Married Graduate Apartment (4 units)	3	4	2	3	1	1	1	2	1	1	-
Single Graduate Dormitory (90 cap)	1		1								
Library		1									
Land		1									
Field Buildings			1								
Food & Nutrition			1								
Social Sciences				1							
Agricultural Engineering			1								
Green houses and head house		2	1	1							
Animal Husbandry		1									
Specialized Research				1							

Unit Costs

Staff Houses = $ 16,000

Apartments (4 units) = 25,000

Dormitories (90 cap) = 225,000

Library 66,000 sq.ft. @ $15 per 1 sq.ft. = 1,000,000

Land 200 Ha. @ $ 2,000 = 400,000

Field Buildings 40,000 sq.ft. @ $8 = 320,000

Field Equipment $ Machinery = 200,000 (To be acquired within 1st 5 years)

Table 2. (continued)

Unit Costs

Food and Nutrition	=	600,000
Social Science and Languages 40,000 sq.ft. @ $12	=	300,000
Green Houses & Head Houses	=	100,000
Agricultural Engineering	=	300,000
Animal Husbandry	=	500,000
Rolling Stock - jeeps, pick-ups, autos & travelalls	=	100,000 (To be acquired within 1st 5 years)

Table 3. **Housing & Facilities Costs**

Facility	First 5 years			2nd five years		
	No.	Unit Cost ($1000)	Total (1000)	No.	Unit Cost	Total
1. Staff Houses	22	16	352	5	16,000	80,000
2. Married Student Apts (4 apts ea)	13	25	325	6	25,000	150,000
3. Single student dormitories (90 cap)	2	225	450			
4. Library building (60,000 sq.ft. net)	1	1,000	1,000			
5. Foods and Nutrition	1	600	600			
6. Agricultural Engineering	1	400	400			
7. Animal Husbandry	1	500	500			
8. Land	200 Ha.	2,000	400			
9. Field Buildings 40,000 @ 8 sq.ft.		320	320			
10. Field Equipment & Machinery		200	200			
11. Renovation for Social Sciences & Language		300	300			
12. Green houses & head houses for Plant Sciences, Entonology & Soils		100	100			
13. Automobiles Jeeps, pickup & other rolling stock		100	100			
14. Specialized Equipment		300	300			
TOTAL			$5,347			$230,000

Table 4.

Costs for Students

		Single	Married
1.	Stipend	$ 4,000	$ 4,800
2.	Allowance		
	Wife		1,200
	Children (average 2)		1,200
3.	In lieu of Tuition & Fees	1,000	1,000
4.	Domestic travel	500	500
5.	Book allowance	300	300
6.	Supplies & Equipment	800	800
7.	Overseas travel	800	2,000
		$ 7,200	$ 11,800

Per Student-year

(If 1/4 are married, this gives an average allowance of $2,139 per student)

$ 2,139 x 250 = $ 534,750, total cost.

Table 5.

Costs for Faculty

1.	Directors Salary		$ 12,000
2.	Assistant to Director		4,000
3.	Salaries, 17 Tenure Professors @ $9,000		153,000
4.	Salaries, 8 visiting professors @ 15,000		120,000
5.	Family allowance - visiting Professors		
a.	Wife - 6 @ $600		3,600
b.	Children - 6 @ $300		1,800
6.	Overseas Travel		
a.	8 visiting Professors	@ 500	4,000
b.	8 wives	@ 500	4,000
	8 families -		
c.	2 children	@ 500	4,000
d.	17 Tenure Professors	@ 250	4,250
e.	1 Director Office	@ 2000	2,000
7.	Research support for 20 Professors @ $ 3000		60,000
	Total		$ 372,650

Table 6. **Costs to the Host Institution**

1.	Administrative Costs	$ 50,000
2.	Service of host-institution staff to Institute Training & Research 15 UP profs @ $6,000	90,000
3.	Share of Maintenance & Repairs for University @ 4% of Construction costs	160,000
	Total	$ 300,000

V. Acknowledgement

The Task Force feels that its report would be incomplete without this short Section. We wish to record here in a modest way our appreciation of the assistance and cooperation received during the tenure of our assignment.

We spent most of our time at the Kasetsart University and the Los Banos College of Agriculture. We wish to record our thanks to the administrative and academic staff of the two institutions for all the facilities accorded to the Force in carrying out their duties. The ready and willing manner the staff of the two institutions have responded to our request for facilities have made our task less burden some and more complete and authorative. Without this excellent cooperation our work would have been impossible.

The hospitality accorded to the Task Force by the host countries was overwhelming. To each and everyone who has made our stay in Bangkok, Los Banos and Manila pleasant and enjoyable we say, thank you.

We appreciate with due acknowledgement the invaluable assistance contributed and rendered by the SEAMES authorities, the United States Oversea Mission in Bangkok and US/AID in Manila to ensure the smooth operation of the Task Force.

Last, but not least, our thanks are due also to all those whom we are not able to name for the help and assistance in whatever form while we were in Bangkok and Manila.

APPENDIX I. DETAILS OF TASK FORCE STUDY

A. COMPOSITION OF THE TASK FORCE

B. COPY OF THE TASK FORCE CHARGE

C. ITINERARY OF THE TASK FORCE

D. LIST OF OFFICIALS INTERVIEWED
AND FACILITIES VISITED

Agriculture

1. List of Representatives of the SEAMES Task Force from Five Member Countries

Country	Name	Title of Post	Office Address
Laos	x		
Malaysia	Mr. Chew Hong Jung	Deputy Director, Department of Agriculture, Ministry of Agriculture.	Department of Agriculture, West Malaysia, Kuala Lumpur.
Philippines	Prof. Gil F. Saguiguit	Director of Instruction & Officer-in-Charge Office of the Dean & Vice President.	Office of the Dean & Vice President, V.P. College of Agriculture, College Laguna Philippines.
Thailand	Mr. Charnchai Na Pombej	Head of Department, Department of Animal Science, Kasetsart University.	Department of Animal Science Kasetsart University, Bangkok.
Vietnam	Dean Ton That Trinh	Dean, College of Agriculture.	College of Agriculture, Saigon, Vietnam.

2. List of Consultants of the SEAMES Task Force From International Organizations.

Organization	Name	Title of Post	Office Address
Cornell University	Mr. Lyle C. Brady	Director of Research College of Agriculture Cornell University.	Cornell University Iehaca N.Y., U.S.A.
Rockefeller Foundation	Mr. Ralph W. Cumming	Associate Director for Agricultural Sciences.	17 Kautilya Marg, Chanakyapuri New Delhi, India.

SEAMES
Oct. 4, 1966

SOUTHEAST ASIAN MINISTERS OF EDUCATION SECRETARIAT

Background Paper
on
The SEAMES Task Force on Agriculture

I. Introduction

At the closing session of the SEAMES Technical Workshop which was held in Kuala Lumpur between 26th - 30th July 1966, the plenary meeting adopted a draft Final Report for submission to the Southeast Asian Ministers of Education. In essence, this document contains the project proposals for regional cooperation in education which have been worked out separately by the various working groups and special committees. The project areas covered by these working groups and special committees are as follows: Engineering, Tropical Medicine, Agriculture, Higher Education and Development, Science and Mathematics, English, Books, Educational Radio and Television, Instructional Materials, Manpower and Educatiinal Planning, and the Establishment of Permanent SEAMES Office.

The working Group on Agriculture, in particular, makes a specific recommendation that a Committee be set up immediately to examine the proposal to establish a regional Institute for Graduate Study and Research in Agriculture. For a fuller background information on this particular project proposal on Agriculture the reader is referred to the text of the Final Report, Sections RG/3/1 and PP/3/1 - 14.

In order to highlight the relevant recommendations in the Working Group's project proposal and in the Rapporteur-General's report, the following passages are quoted:

RG/3/1 "....Accordingly, the Working Group suggested that a Committee be appointed to study the matter more closely and make suitable recommendations......"

PP/3/5 "The Group studies the propsal for siting the Institute in the Philippines and also received a verbal bid for locating the Institute in Thailand....... The Working Group recommended that a Committee be appointed to study the matter more intensively and to make specific recommendations as to the site of the proposed Institute. It was thus emphasised that, in recommending a site to establish the proposed Institute, the Committee should bear in mind the following points:-

i. The contribution to be made by the host country;

ii. The adequacy or otherwise of existing facilities for the project in the host country."

II. Terms of Reference for the SEAMES Task Force on Agriculture

In view of the urgency of the above recommendation and the possibility of holding the next ministerial conference in the near future, the Secretariat considers it appropriate to form a task force on Agriculture with the following term of reference:

i. Determine the contribution to be made by the host country;

ii. Study the adequacy of existing facilities for the project in the host country;

iii. In consultation with the prospective host country, determine the nature of the relationship between the proposed Regional Institute and the existing national institution.

iv. Devise a phased programme of development for the first two five-year periods of operation .

v. Estimate the costs for the development of the Institute during the first five years and indicate the magnitude and sources of finance.

Composition

Apart from consultant service from outside Southeast Asia, the following SEAMES countries, Laos, Malaysia, Philippines, Thailand and Vietnam are invited to send professional representatives to join the SEAMES Task Force on Agriculture.

i. Professional Representatives from Member Countries:

In view of the focus on graduate education and research at the University level, it is hoped that member countries will nominate senior specialists with experience in university teaching research and administration. Each country is invited to nominate one representative to the task force.

ii. Consultants: The Secretariat is enlisting international consultant service to join the task force.

Organization of Work

It is expected that the task force will first assemble in Bangkok for briefing with the SEAMES Director before its departure on a tour of consultation and visits in the Philippines and Thailand.

It is requested that Ministries of Education in each of the countries visited will kindly prepare suitable schedule of visits and consultation with the appropriate authorities in the country. The above terms of reference for the task force should serve as a guideline in preparing the schedule of visits and consultation. The local office of USAID or the American Embassy in the member countries have been requested to offer whatever assistance in needed in this connection.

After the tour of the two member countries, the task force is expected to complete their report writing in Bangkok for transmittal to the SEAMES Director.

Schedule for the SEAMES Task Force on Agriculture

A schedule for the task force is attached herewith. A more detailed schedule including airlines, flight numbers and date will be issued to the member countries to be visited.

Reception atthe Airport, Accomodation and Local Transport

As soon as details about the travel of the task force including the flight number and date of arrival and departure are know, the Secretariat will transmit the information to the Ministries of Education of the member countries to be visited. It is requested that the Ministries kindly extend to the task force the necessary facilities in connection with the reception at the airport, reservation of hotel accommodation, and if possible local transportation.

Financial Arrangements

The expenses incurred by the mounting of the task force will be met by USAID. In particular, USAID will defray the costs of international travel and per diem of the country representatives and consultants, and other expenses connected with the preparation of the report. The local office of USAID or the American Embassy in the member countries will contract the member country representatives directly concerning their per diem and air passage.

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LIST OF DOCUMENTS

Considered by the Working Group on Agriculture

During the Technical Workshop, Kuala Lumpur, 26th-30th July 1966

	Type/Title of Documents	Reference
1.	Discussion Paper	SEAMES/011.08
	Written Comments	
2.	Southeast Asian Member Countries Written Comments on the Discussion Paper (Loas, Malaysia, Vietnam)	SEAMES/011.09
3.	Additional Southeast Asian Member Countries, Written Comments (The Philippines, Thailand)	SEAMES/011.09/[illegible] add.1
	Draft Project Proposals	
4.	Draft Project Proposal for the establishment of a Regional Institute for Graduate Study and Research in Agriculture	SEAMES/041.01/D.1 add.1
5.	Dr. D.L. Umali's Memorandum on the activities of the College of Agriculture, Los Banos	SEAMES/041.01/D/1 add.2
	Other Documents Submitted by the Member Countries during the Technical Workshop	
6.	Memorandum on the Regional Program for Agricultural Education, Training and Research in Southeast Asian from the Philippines	
	Final Report of the SEAMES Technical Workshop	
7.	Rapporteur - General's Report	RG/3/1-2
8.	Project Proposals on Agriculture	PP/3/1-14

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SCHEDULE FOR THE SEAMES TASK FORCE ON AGRICULTURE

Monday	September	12th	: Arrival in Bangkok
Tuesday	"	13th	: Call on the SEAMES director : Departure for Manila
Wednesday Saturday	" "	14th - 17th	: Consultation and visits in the Philippines
Sunday	"	18th	: Departure for Bangkok
Monday Wednesday	" "	19th - 21st	: Consulation and visits in Thailand
Thursday Friday	" "	22nd - 23rd	: Report preparation and its transmittal to the SEAMES Director.

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APPENDIX I

Details of Task Force Study

A. Composition of Task Force

1. Charnchai Na Pombejara,
   Head, Animal Sciences
   Faculty of Agriculture
   Kasetsart University
   Bangkok, Thailand

2. Chew Hong Jung
   Deputy Director
   Department of Agriculture
   West Malaysia
   Kuala Lumpur, Malaysia

3. Gil F. Saguiguit
   Director of Instruction & Officer-in-charge
   Offices of the Dean & Vice President
   U.P. College of Agriculture
   College Laguna, Philippines

4. Ton That Trinh
   Dean, College of Agriculture
   Saigon, South Vietnam
   (Dean Trinh was present for part of the Task Force assignment)

Task Force Consultants

1. N.C. Brady
   Director of Research
   College of Agriculture
   Cornell University
   Iehaca N.Y. (USA)

2. Ralph Cummings
   Officer-in-charge and Field Director
   The Rockefeller Foundation
   New Delhi India

Schedule for SEAMES Task Force

September 14 - 16, 1966

(Lodging at IRRI Guest House)

SEPTEMBER 14

3:00 p.m. - Arrival

3:30 p.m. - 5:00 p.m. - Briefing on the Los Banos Complex

5:30 p.m. - Cocktails at residence of Dr. Byrnes

6:30 p.m. - Dinner at International House with College Officials

SEPTEMBER 15

7:00 a.m. - Breakfast at IRRI Guest House

8:00 a.m. - Resume briefing on 5-yr. Development Program

9:30 a.m. - Briefing by Dean Lantican on U.P. College of Forestry and tour of UPCF facilities

10:15 a.m. - 10:30 a.m. - Break

10:30 a.m. - 11:00 a.m. - Conference with Dr. R. F. Chandler at IRRI

11:00 a.m. - 12:00 noon - Tour of IRRI facilities and visit with one or two IRRI trainees

12:00 noon - 1:30 p.m. - Lunch

13:30 p.m. - 6:00 p.m. - Visitation to several units

Physical Sciences

1:30 - 2:30 p.m. - SOILS
2:30 - 3:00 p.m. - AG. CHEM.

Plant Sciences

1:30 - 2:30 p.m. - AGRON.
2:30 - 3:00 p.m. - PLPATH

3:00 - 3:30 p.m. - Break

Animal Sciences

3:30 - 4:00 p.m. - ENTOM
4:00 - 5:00 p.m. - AN HUS
5:00 - 6:00 p.m. - DTRI

Social Sciences

3:30 - 4:00 p.m. - AG EDUC
4:00 - 5:00 p.m. - DAIC-FHDO
5:00 - 6:00 p.m. - ACCI

6:30 p.m. - Dinner at International House with Directors

SEPTEMBER 16

7:00 a.m. - Breakfast with Dr. R. Bradfield

8:00 a.m. - Conference at Operatiens Room With Officials of the Los Banos Complex

11:30 a.m. - Tour of UPCO Housing area

12:00 noon - 1:00 p.m. - Lunch with Dr. G. W. Trimberger

1:00 p.m. - 2:00 p.m. - Meeting with UPCO group

2:00 p.m. - 5:00 p.m. - Resume meeting at Operations Room

5:00 p.m. - Prepare to leave for Manila

5:30 p.m. - Departure

Essential Details of The Task Force Study

Names and titles of officials interviewed and facilities visited in the Philippines:-

MANILA

Department of Education

1. Dr. O. Di Corpuz
   Under-Secretary and Acting Secretary

2. AHY Pompeyo Gregorio
   Technical Assistant to the Secretary

National Economic Council

1. Mr. Rizalino Pablo
   Executive Secretary

U.S./AID

1. Dr. Cameron Bremseth
   Regional Training Officer

2. Mr. Angel M. Quimson
   Adm. Assistant

LOS BANOS

College of Agriculture

1. Dr. Gil F. Saguiguit
   Professor and concurrently Director of Instruction and Officer-in-Charge offices of the Dean and Vice President

2. Dr. F.T. Orillo
   Professor and concurrently Director of Research

3. Dr. B. de los Reyes
   Asso. Professor and concurrently Director of Extension Education

4. A.P. Agliout
   Professor and concurrently Director of Business Affairs

5. Eng. J. Flor
Asso. Professor and concurrently Director of the Physical Plant and Project Manager, 5-year Dev. Program.

6. Dr. J.C. Madamba
Asst. Professor and Asst. to the Dean

7. Dr. N. Galvez
Professor and Chairman, Department of Soils

8. Dr. C. Mamaril
Asst. Professor and Asst. Chairman
Department of Soils

9. Dr. J. Banzon
Professor and Chairman, Dept. of Agri. Chemistry

10. Dr. R. Samaniego
Professor of Agri. Chemistry

11. Dr. R. Landican
Asso. Professor and Chairman, Dept. of Agronomy

12. J. Deanon
Asst. Professor of Horticulture

13. Dr. R. Valmayor
Asst. Professor of Horticulture

14. Dr. M. San Juan
Asst. Professor and Chairman, Dept. of Plant Pathology

15. Dr. O. Exconde
Asst. Professor of Plant Pathology

16. Dr. F. Catora
Asso. Professor and Chairman, Dept. of Entomology

17. Dr. F. Sanchoz
Asst. Professor of Entomology

18. Dr. C. Madamba
Asst. Professor of Nematology

19. Dr. C. Perez
Asst. Professor and Asst. Chairman, Dept. of Animal Husbandry

20. Dr. [illegible] Rigor
    Asst. Professor of Animal Husbandry

21. Dr. G. Garcia
    Asso. Professor and Chairman, Dept. of Animal Husbandry and concurrently Director of the Dairy Research and Training Institute (DTRI)

22. Dr. F.T. Ramos
    Asst. Professor of Agri. Education and Principal, UP Rural High School

23. Dr. T. Flores
    Asso. Professor and Chairman, Dept. of Agri. Information and Communications

24. Dr. R. Towes
    Asst. Chairman, Dept. of Agri. Economics

25. Perla Umale
    Training Officer

International Rice Research Institute

1. Dr. R.F. Chandler
   Director

2. Dr. F. Byrnes
   Communications Specialist

3. Dr. R. Bradfield
   Special Consultant

4. Four (4) Graduate Trainees: 1 Pakistani
   1 Japanese
   2 Philippines

Dairy Research and Training Institute

1. Dr. Rattray
   Acting Project Manager

2. Dr. A. Achacoso
   Forage Specialist

3. Dr. H. Ordoveza
   Nutritionist

4. Dr. Mclemont
   Dairy Technologist

5. Dr. Wagelie
   Animal Breeding Specialist

Agricultural Credit and Cooperatives Institute

1. Dr. V. Quintana
   Asst. Director

2. Atty J. Corral
   Adm. Officer

UP - Cornell Graduate Education Program

1. Dr. G.W. Trimberger
   Project Leader

2. Team of Visiting Professors (Knott, Smock, Herrington, Pederson, Uhler, Glass, Ainslee, Sentz, Barrev, Chang and Hsieh)

3. Filipino, other Asian and American graduate students.

College of Forestry

1. Dr. D. Lantican
   Dean

2. Dr. N. Vergara
   Asst. Professor of Forest Extension

Other Facilities Visited

1. UPCO Housing
2. IRRI Staff Housing
3. UPCA Faculty Housing
4. International Housing
5. Libraries (UPCA, IRRI, and UPCF)
6. Operations Center, UPCA
7. Service Building, IRRI

Itinerary

for the

SEAMES Team at Kasetsart University

Monday, September 19, 1966.

0900 am	Conference with the University Rector at the Royal Irrigation Department
1200 noon	Luncheon given by the University
1300 pm	Conference with the Dean, College of Agriculture and Head Departments of the Faculty
1430 pm	Visit the Department of Soil Science
1500 pm	Visit the Department of Animal Husbandry Poultry Piggery Dairy

Tuesday, September 20, 1966

0830 am	Visit the Faculty of Veterinary Science
0930 am	Visit the Faculty of Fisheries
1000 am	Visit the Rice Research Center
1200 noon	Luncheon at the University Cafeteria
1300 pm	Visit the nursery of Horticulture, Department of Plant Science
1330 pm	Visit the Department of Chemistry, Faculty of Science and arts.
1400 pm	Visit the Department of Entomology and Plant Pathology Faculty of Agriculture
1445 pm	Visit the National Atomic Energy for Peace
1600 pm	Visit the Faculty of Forestry

Wednesday, September 21, 1966

0900 am	Visit the National Research Council, Research Corporation of Thailand, the Thai National Documentation Center
1030 am	Leave for Pak Chong
1200 noon	Luncheon at the Suwan Farm of the University
1300 pm	Visit the National Maize and Sorghum Improvement Center at Pak Chong
1430 pm	Visit the University Training Station at Pak Chong
1530 pm	Visit the Veterinary Institute of the Department of Livestock Development at Pak Chong
1730 pm	Visit the Thai Danish Dairy Farm at Muaklek
1800 pm	Leave for Bangkok

Thursday, September 22, 1966

0900 am	Conference for the report proposal at the University Main Administration

Names and Titles of Officials Interviewed in Thailand

1.	M.L. Xujat Kambhu	Rector of Kasetsart University
2.	Dr. Tim Bhanasiri	Secretary-General
3.	Dr. Prasert Na Nagara	Deputy Rector
4.	Professor Jarut Soontarasing	Dean College of Agriculture
5.	Dr. Bunjerd Khatikarn	Head Department of Plant Science
6.	Dr. Sutham Areekul	Head Department of Entomo and Plant Pathology
7.	Dr. Sorasith Watcharotayan	Acting Head Department of Soil Science
8.	Prof. Pranee Cheangchenkit	Acting Head Department of Farm Mechanics
9.	Mrs. Lada Ratakasikorn	Acting Head Department of Home Economics
10.	Asst. Professor Porn Resananda	Acting Head Department of Rural Education
11.	Asso. Prof. Chanchai Na Pombej	Head Dept. of Animal Science
12.	Asso. Prof. Suntat Rojanasoonthorn	Dept. of Soil Science

13.	Dr. Prateep [illegible]hapeatayakom	Dept. of Animal Husbandry
14.	Dr. Prasert Rienkeaw	Animal Nutritionist of Dept. of Animal Husbandry
15.	Dr. Pratom Laewhakaset	Animal Physiologist Dept. of Animal Husbandry
16.	Ass. Professor Praset Jermporn	Artificial Insemination Specialist of Animal Husbandry Dept.
17.	Ass. Charan Chantatakhana	Animal Breeder of the Dept. of Animal Husbandry
18.	Dr. Paitoon Ingkasuwan	Animal Physiologist
19.	Ass. Professpr Tongyot Anekavieng	Dairy Technologist
20.	Ass. Prof. Chusri Onenarom	Dairy Technologist
21.	M.R. Chavanit Nadakorn Worawan	Dairy Husbandry
22.	Dr. Sucheep Ratanasarn	Swine Production Specialist
23.	Prof. Tiang Tangsanguan	Dean of Veterinary Science
24.	Dr. Lek Tanasudharn	Animal Pathologist
25.	Dr. Chuanpit Saphonhiranrak	Anatomist
26.	Ass. Prof. Prasit Potipuk	Veterinary Surgerian
27.	Dr. Supit Chindawanich	Biochemist

APPENDIX II

SELECTED DATA FROM THE TWO INSTITUTIONS

A. KASETSART UNIVERSITY

B. UNIVERSITY OF THE PHILIPPINES
COLLEGE OF AGRICULTURE

APPENDIX II A

MEMBERS OF KASETSART AGRICULTURAL FACULTY ACCORDING TO THE HIGHEST DEGREE THEY POSSESS (AS OF SEPTEMBER 1966)

	Department	BS.	MS.	Ph.D
1.	Entomology & Plant Path	12	13	6
2.	Farm Mechanics	5	1	-
3.	Home Economics	5	4	-
4.	Plant Science	17	15	2
5.	Food Science	1	1	-
6.	Rural Education	8	8	1
7.	Animal Science	6	9	5
8.	Soils	5	5	1
9.	Agri. Economics *	7	11	2
10.	Chemistry *	5	7	2
11.	Biology *	13	6	1
	TOTAL	84	80	20

* In faculties other than Agriculture.

STAFF BEING TRAINED ABROAD

(KASETSART)

	Department	Degree Expected & Country	
		Ph.D.	MS.
1.	Entomology & Plant Pathology	1 Germany	-
		6 USA	-
2.	Farm Mechanics		1 USA
3.	Plant Science	4 USA	2 USA
		1 Germany	
4.	Animal Science		1 India
5.	Soil Science	1 USA	1 Philippines
6.	Agri. Economics *	6	5
7.	Chemistry *	2	1
8.	Biology *	5	1
	TOTAL	26	12

* Departments in faculties other Thais Agriculture.

MS. STUDENTS DOING GRADUATE WORK AT KASETSART

Department	Number
1. Entomology & Plant Path	1
2. Plant Science	11
3. Rural Education	5
4. Animal Science	1
5. Agriculture Economics	11
6. Biology	4
TOTAL	93

Kasetsart Library Holdings

1. Volumes in Main Library	20,000
2. Volumes in Departments	5,000
TOTAL	25,000

APPENDIX II B

LOS BANOS COMPLEX AT A GLANCE

1) AGRICULTURAL CREDIT AND COOPERATIVES INSTITUTE (ACCI) Established in 1960

Provides services and facilities on credit and cooperatives in Southeast Asia

- Pre-service and in-service training
- Research
- Informational and instructional materials

2) DAIRY TRAINING AND RESEARCH INSTITUTE (DTRI)

Established in 1962

Provides services and facilities on dairy science and technology in Southeast Asia

- Specialized training
- Research
- Extension in support of dairy industry

3) COMMUNITY DEVELOPMENT CENTER (CDC)
Established in 1957

Provides services and facilities in community development in Southeast Asia and other parts of the world

- Pre-service and in-service training for village leaders and workers
- Orientation of local government officials
- Action programs

4) INTERNATIONAL RICE RESEARCH INSTITUTE (IRRI)
Established in 1962

Provides services and facilities for the study of all aspects of the rice on a world-wide basis

- Research
- Training for rice specialists
- Graduate training
- Extension

5) FOREST PRODUCTS RESEARCH INSTITUTE (FPRI)
Established in 1957

Provides services and facilities for studies on forest products

- Utilization of forest products and by-products
- Informational and instructional materials to wood industries
- National and international coordination in the utilization of forest resources

6) U.P. COLLEGE OF FORESTRY (UPCF)
Established in 1910

Provides services and facilities for education in forestry science and technology

- Pre-service and in-service training
- Research
- Extension

7) U.P. COLLEGE OF AGRICULTURE (UPCA)
Established in 1909

Provides services and facilities for education in agricultural science and technology

- Undergraduate and graduate instruction in tropical agriculture
- Research
- Extension
- National and international involvement in agricultural programs and projects

THE COLLEGE OF AGRICULTURE

---- Now has:

825 Hectares of campus and access to Maquiling National Park

413 faculty members

2509 students (172 foreign)

- 2226 undergraduate
- 283 graduate

THREE MAJOR FUNCTIONS:

- Instruction
- Research
- Public service through extension

And a rapidly developing dimension of international involvement making it the center of agricultural education and research in Southeast Asia

THE INSTRUCTION FUNCTION

----- Provides BS. degree programs in:

Agriculture
Home Technology
Agricultural Engineering
Agricultural Chemistry

----- Offers MS. degree in 12 technical departments and the Ph.D. in 8

----- Has turned out 5700 graduates, including 278 from 15 Asian countries, Micronesia, and Ethiopia

Alumni occupy positions of leadership -

46 percent in educational work
34 percent in technical work
8 percent in farming
12 percent in related pursuits

THE RESEARCH FUNCTION

----- Supports instruction and extension programs

----- Provides for basic and applied research in the broad spectrum of Agricultural Science and Technology

----- Draws support from 17 different private grants; studies undertaken by staff and thesis students

----- Has yielded over 4,000 technical papers accounting for 85 percent of the total agricultural research output of the country

----- Turns out annually about 200 completed researches of which 120 are published

----- Undertakes cooperative research projects with other agencies here and abroad

PUBLIC SERVICE THROUGH EXTENSION

----- Disseminates research findings to end-users

- Publishes leaflets and bulletins for farmers, teachers and researchers
- Provides technical information in English and in 5 major dialects to farmers and homemakers through 92 radio stations, 47 local papers, 4 magazines

----- Supports agricultural development programs

- Participation in national economic planning
- Providing resource persons (civic action centers, Bicol planning development board, provincial economic development commissions, rural banks, rural development seminars, "Magsaysay hectare," rice and corn program "spread," etc.)
- Participating in field days (farmers' associations, poultry and livestock week, rural banks, etc.)
- Supports private industry (production teams)

----- Provides training for extension personnel of government and private organizations

- In-service training in rice production, farm management, supervised credit, etc.
- Pre-service training in farm and home development for rural banks, Operations Brotherhood, Philsugin, etc.
- Special training for overseas participants like Thailand, Pakistan, Netherlands, Nigeria, international voluntary services from U.S.A.

----- Sponsors seminars, workshops, and conferences

- Family planning
- Poultry raisers' associations
- Farm mechanization
- Science teachers
- Teaching agricultural economics
- Landowners

----- Offers training for farmers, homemakers, and other agricultural workers

- Short courses (poultry, swine. muchroom, clothing construction, vegetables, etc.)
- Field days (on- and off-campus)
- Barrio schools (rice, rat, swine, poultry, etc.)

----- Assists large farms and disaster areas (e.g. Taal)

----- Provides leadership in developing extension education programs in agricultural colleges and schools.

GROWING INTERNATIONAL INVOLVEMENT

----- Sister-University Relationships

----- Academic Exchange

  . Professors

  . Graduate

----- Cooperative Projects in Improvement of Instruction, Research and Extension in Agriculture

UPCA's MAJOR CONTRIBUTIONS TO NATIONAL PROGRESS (1960-1965)

INSTRUCTION:

1. Organized Association of Colleges of Agriculture of the Philippines (ACAP)
2. Provides leadership in graduate program in agriculture in Southeast Asia.
3. Produced graduates: 3 Ph.D.; 117 M.Sc.; 1,376 B.S.A.; 205 BSHT; Sugar Tech. 30; Others, 9.
4. Instituted Agri-business curriculum in cooperation with UP College of Business Administration.

RESEARCH:

1. Increased milk production per hectare by 230 percent over 1962 figure.
2. Proved that carabaos utilize poor roughage feeds better than cattle.
3. Tested grass and legume crops for forage production.
4. Developed least-cost formulas for swine rations.
5. Developed 5 rust-resistant coffee strains of Arabica variety and several borer-resistant cacao varieties.
6. Developed outstanding vegetable varieties.
7. Made great strides in study of cadang-cadang disease of coconuts.
8. Developed "Tristesa" - resistant citrus rootstocks
9. Improved methods of "toyo" manufacture.
10. Established 6 agroclimatic and 5 agrometeorological stations in the country.
11. Developed fire-proof, water-proof and insect-proof compound from coconut oil.

EXTENSION:

1. Developed new techniques in cropping fresh and volcanic ash deposits (Taal area).
2. Instituted simplified farm record-keeping, research in family planning and farm management practices.
3. Proved commercial possibilities for sorghum.
4. Developed and popularized mushroom culture.
5. Promoted vegetable industry in many provinces.
6. Compiled more than 100 recipes for rice and corn.
7. Pioneered in professional translation of scientific information to farmers' use.
8. Developed effective approach to rural extension services.
9. Established largest pool of farm information in the country (40 farmers' publications).
10. Supplies farm news in 5 major dialects to 92 radio stations in the country.

HIGHLIGHTS OF UPCA PARTICIPATION IN THE RICE AND CORN PROGRAM
(1960 - 1965)

----- Developed 6 corn hybrids each producing 75-100 cavans/ha. compared with national average of 16 cavans/ha.

----- Introduced synthetic hybrid corn.

----- Standardized a corn production scheme.

----- Developed effective herbicides for weed control.

----- Developed 24 rice varieties (15 lowland and 9 upland) for commercial production by the Philippines Seed Board

----- Proposed improved cultural and management practices.

----- Undertaken various researches on chemical control of diseases and pests.

----- Recommended proper milling and utilization of rice and corn and their by-products,

----- Standardized nutrient content of rice and corn by-products as animal feeds for implementation of Feed Control Law.

THE COLLEGE IS COMMITTED TO HELP ATTAIN NATIONAL GOALS:

----- Self-sufficiency in food for fast growing population

----- Increased production of dollar-earning and dollar-saving products

----- Promotion of new industries including fuller utilization of farm by-products and wastes

----- Conservation of natural resources

----- Improvement of economic and social condition of villagers (72 percent of population).

THE CHALLENGE - TRAIN MEN FOR INTELLIGENT AND RESPONSIBLE LEADERSHIP IN:

----- Increasing crop and livestock production to help solve recurring problem of food shortage

----- Increasing production of export products

----- Producing raw materials for our industries

----- Staffing at least 22 government entities

----- Upgrading faculty of 86 Agricultural Schools and 39 Colleges of Agriculture

----- Pushing forward the frontiers of agricultural science and technology thereby increasing pool of knowledge and techniques for solution of agricultural problems

----- Intensifying functional programs of extension

----- Sustaining enthusiasm of Asian neighbours to study at the college

----- Strengthening and expanding graduate programs

----- Meeting staff needs of banking institutions, industrial and business firms, commercial farms, cooperatives

----- Satisfy additional need for 10,000 agricultural graduates for land reform program

----- Undertaking measures for proper utilization and conservation of our land and water resources

IN RESPONSE TO THE CHALLENGE ....
A LONG-RANGE DEVELOPMENT PROGRAM WAS STARTED

COMPONENTS:

- Development of a strong and competent staff
- Improvement in the quality of the studentry
- Development of programs in the functional areas of instructions, research and extension, including administration and international relationships
- Facilities development, including building construction and essential utilities

ACADEMIC TRAINING OF STAFF
(In percent)

Degree Held	U.S. 1/	Whole U.P.	U P C A	
		Present	Present	Goal
Ph.D.	43	11	17	45
MS.	37	29	32	35
BS.	20	60	53	20

1/ Average of 25 North American Universities

ADVANCED TRAINING OF FACULTY
(in actual numbers)

Place of Training	1963		1966	
	MS.	Ph.D.	MS.	Ph.D.
Abroad	24	31	45	73
Local	183	1	130	3
TOTAL	207	32	175	76

IMPROVEMENT OF STUDENTRY THROUGH --

- Aggressive recruitment
- Fellowships, scholarships and study grants
- Tuition fee exemptions
- Working for hourly pay
- Short-term loans
- Expansion of dormitory, cultural and recreational facilities
- Counseling and placement services

FACILITIES DEVELOPMENT

- Campus master plan-zoning
- Improvement of the Library
    - Planned acquisition of 200,000 books and bound volumes
    - Air-condition, 2 floors
- Major construction-buildings
    - Biological Sciences
    - Physical Sciences
    - Agronomy-Soils
    - Student Union
    - Food Science
    - FHDO and DAIC
    - Agricultural Engineering
    - Physical Plant
    - Auditorium
    - Administration
    - Boys' Dormitory
    - Girls' Dormitory
    - Faculty and Employee Houses, including Shopping Center

SCHOLARSHIPS, ETC.
(in actual numbers)

Level	1963	1964	1965
Undergraduate	201	276	307
Graduate	114	142	172
TOTAL	315	418	479
Working for hourly pay	215	298	121
Tuition fee exemption	333	649	470
Short-term loans	405	398	391

NEW RESEARCH PROJECTS AND LABORATORIES:

- Corn breeding
- Hortorium and herbarium
- Food Science and technology
- Virus and serological laboratory
- Crop research laboratory
- Crop storage and processing
- Hydrological laboratory
- Animal disease and parasite control laboratory

ESSENTIAL SERVICES

- Water System
- Electric System
- Telephone Service
- Sewage System
- Campus Fencing
- Roads and Pathways
- Health Services
- Centralized Cafeteria
- Security Stations
- Fire-Fighting System

4

FINANCING THE FIVE-YEAR DEVELOPMENT PROGRAM

. COSTS:

. Major constructions, renovation and essential services	P	46	M
. Staff development		4	M
. Program development		16	M
TOTAL	P	66	M

SOURCES:

World Bank Loan	P 24 M
Philippine Counterpart (RA 3854)	22 M
Foundations	
Committed and released directly to fellows ..	4 M *
Committed for 5-year UP-Cornell Graduate Education Program	16 M **
TOTAL	P 65 M

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* Staff development

** Released at UPCA and Cornell

PROGRAMMED EXPENDITURES

SOURCE	1963-64		1964-65		1965-66	
	Released	Unreleased	Released	Unreleased	Released	Unreleased
Ph						
				- Million Pesos -		
Phil. Gov't.	0	4.31	1.70	2.61	2.38	4.18
World Bank *						
Foundations	1.34	0	1.39	0	1.57	0

* World Bank releases are made only when Central Bank certificates our Philippine government releases.

Members of UPCA Faculty According to the Highest Degree they Possess (As of September 1966)

Department	B.S.	M.S.	Ph.D.
Agricultural Botany	14	13	4
Agricultural Chemistry	18	4	4
Agricultural Economics	17	5	4
Agricultural Education	19	10	5
Agricultural Engineering	14	3	2
Ag. Info. and Comm.	16	5	3
Agronomy	26	10	7
Animal Husbandry & DTRI	26	8	15
Library	1	0	0
Student Affairs	2	0	0
Applied Mathematics	10	6	1
Entomology	13	11	4
Home Technology	6	7	2
Humanities	17	8	0
Plant Pathology	8	8	4
Soils	12	3	5
FHDO	3	2	1
Food Science	6	4	1
Total	228	107	62

LIST OF FACULTY ON STUDY LEAVE
ABROAD (As of Sept. 15, 1966)

Name (1)	Field of Study & Institution (2)	Sponsor (3)	Degree Sought (4)	Effectivity of Leave (5)
AGRICULTURAL BOTANY:				
Julia G. Baldia	Botany University of California	Assistantship	M.S.	May 5, 1964
Estela E. Generoso	Electron Microscope University of Missouri	Assistantship	M.S.	August 1, 1965
Bonifacio T. Mercado	Agricultural Botany Bad Gadenberg West Germany	D A A D	Ph.D.	June 4, 1965
Tito J. Rimando	Plant Physiology University of California	Rockefeller	Ph.D.	August 15, 1964
Juan V. Pancho	Floristic Study Harvard University	Guggenheim		November 1, 1965
Ernesto B. Pantastico	Botany University of California	Rockefeller	Ph.D.	September 1, 1965
Antonio T. Perez	Radiation Genetics University of Hawaii	East-West	Ph.D.	September 1, 1965
Percy Ec. Sajise	Applied Plant Ecology Cornell University	UP-Cornell	M.S.	September 1, 1966
AGRICULTURAL CHEMISTRY:				
Armando B. Aspiras	Food Technology Karlsuhe, University of Germany	D A A D	Diplom Arbeit	July 1, 1965

(1)	(2)	(3)	(4)	(5)
Elvira T. Manzanilla	Biochemistry Kansas State University	Rockefeller	Ph.D.	September 1, 1965
Rosalita R. de la Mar	Food Technology University of Massachussetts	Assistantship	Ph.D.	October 25, 1965
Jesus V. Melgar	Food Science and Technology Cornell University	UP-Cornell	M.S.	September 1, 1965
Sigrid S. Rodolfo	Organic Chemistry Purdue University	Rockefeller	Ph.D.	September 1, 1965
Reynaldo P.N. Obed	Isotopic Techniques in Agriculture Oxford University	IAEA	M.S.	March 25, 1966
Belo, Panfilo S.	Food Science Michigan State University	Assistantship	M.S.	September 1, 1966
Azucena R. Santiago	Physical Chemistry University of Houston		Ph.D.	September 1, 1965
Alicia C. Santos	Biochemistry University of Illinois	Assistantship	M.S.	September 1, 1965
Luciano T. Talens	Electron Microscopy and Plant Virology University of Nebraska			
Umale, Lilian L.	Agricultural Chemistry University of Wisconsin	Fulbright-Hayes	Ph.D.	
Polygena A. Tejada	Organic Chemistry Ohio State University	Assistantship	M.S.	September 15, 1965
Gertrudes A. Santos	University of Oxford	SEATO		February 1, 1966

(1)	(2)	(3)	(4)	(5)
Ernesto C. Tuazon	Organic Chemistry University of Dayton	Assistantship	M.S.	September 1, 1965
Baril, Carlito R.	Chemistry Cornell University	UP-Cornell	Ph.D.	September 1, 1966
AGRICULTURAL ECONOMICS:				
Ernesto P. Abarientos	Agricultural Economics University of Hawaii	East-West	Ph.D.	September 1, 1965
Bonifacio Z. Bangcaya	Guidance and Counselling University of Minnesota	Assistantship	M.S.	August 8, 1963
Covar, Miriam P.				
Leodegario M. Ilag	Agricultural Economics Purdue University	Rockefeller	Ph.D.	September 1, 1966
Recto, Aida E.	Agricultural Economics University of Minnesota	A D C	Ph.D.	September 8, 1966
AGRICULTURAL EDUCATION:				
Tito E. Contado	Agricultural Education Cornell University	Rockefeller	Ph.D.	September 1, 1965
Arsenio C. Gagni	Agricultural Education Cornell University	Research Fellowship	Ph.D.	September 7, 1965
Milagros D. Ibe	Teaching Mathematics University of Toronto	Colombo Plan	M.S.	September 1, 1965

(1)	(2)	(3)	(4)	(5)
Elsa V. Perez	Political Science University of Wisconsin	Fulbright-Hayes	Ph.D.	August 1, 1965
Severino R. Santos, Jr.	Agricultural Education University of Illinois	Rockefeller	Ph.D.	September 1, 1965
Lita S. Velmonte	Rural Sociology Michigan State University		M.S.	September 1, 1965
Buenaventura M. Villanueva				November 1, 1963
Gelia T. Castillo	Cornell University	UP-Cornell		September 15,1965
Sylvia H. Guererro	Social Psychology University of Wisconsin	Assistantship	Ph.D.	September 1, 1966
AGRICULTURAL ENGINEERING:				
Reynaldo M. Lantin	Agricultural Engineering Iowa State University	Rockefeller	Ph.D.	September 1, 1964
Senen M. Miranda	Agricultural Engineering Cornell University	Rockefeller	Ph.D.	September 1, 1965
Juanito M. Ramirez	Agromateology Ontario Agricultural College	Assistantship	M.S.	June 1, 1964
AGRONOMY:				
Isaac C. Cagampang	Agronomy Purdue University	IRRI	Ph.D.	June 1, 1965

(1)	(2)	(3)	(4)	(5)
Salvador R. Bautista	Landscaping and Architecture University of California	UP-Cornell	M.S.	September 1, 1965
Juan T. Carlos, Jr.	Pomology University of Florida	Rockefeller	Ph.D.	September 1, 1965
Laures T. Empig	Quantitative Genetics University of Minnesota	Assistantship	Ph.D.	June 10, 1965
Noel G. Mamicpic	Agronomy Cornell University	UP-Cornell	Ph.D.	September 8, 1965
Adolfo G. Necesite	Agronomy Cornell University	UP-Cornell	Ph.D.	September 1, 1965
Romeo A. Obordo	Agronomy Texas A and M University	Rockefeller	Ph.D.	September 1, 1965
Constancio T. Ragual	Agronomy University of Illinois	Rockefeller	Ph.D.	September 5, 1964
Jose C. Hapitan, Jr.	Horticulture University of Rhode Island	Assistantship	M.S.	July 1, 1966
Romeo U. Quintana	Tesas A and M. University	Rockefeller	Ph.D.	September 1,1966
Reynaldo C. Rodriguez	Horticulture Michigan State University	Assistantship	M.S.	September 16, 1965
Ruben L. Villareal	Horticulture New Jersey State University	Assistantship	Ph.D.	July 1, 1965
Fernando A. Bernardo	Kansas State University			October 25, 1965

(1)	(2)	(3)	(4)	(5)
ANIMAL HUSBANDRY:				
Felecitas C. Arganosa	Food Science and Technology Oklahoma State University		Ph.D.	September 1, 1965
Valentino G. Arganosa	Animal Science Oklahoma State University	Rockefeller	Ph.D.	September 1, 1965
Elpidio C. Coligado	Poultry Science Texas A and M. University	Assistantship	Ph.D.	September 1, 1964
Maximo C. Gacula, Jr.	Swine Production University of Arkansas	Assistantship	M.S.	June 30, 1962
Mario M. Labadan	Animal Nutrition Cornell University	UP-Cornell	Ph.D.	September 1, 1965
Perla L. Lopez	Animal Nutrition Missouri State University	Rockefeller	Ph.D.	September 1, 1965
Castillo Leopoldo S.	Cornell University	UP-Cornell		July 16, 1966
Vicente G. Momongan	Animal Physiology Cornell University	UP-Cornell	Ph.D.	September 1, 1965
Puyaoan, Rodolfo B.	Animal Cenetics Pennsylvania State University	NSDE	Ph.D.	March 13, 1965
Benedicto A. Parker	Animal Breeding Texas A and M University	Rockefeller	Ph.D.	September 1, 1965
APPLIED MATHEMATICS:				
Leticia A. Abad	Low Temperature and Solid State Physics	UP Partial Fellowship	M.S.	September 1, 1965

(1)	(2)	(3)	(4)	(5)
Henry F. Magalit	Statistics Florida State University	Assistantship	M.S.	
Jesusa T. Taleon	Mathematics University of Minnesota	Rockefeller	Ph.D.	September 1, 1965
Mariano B. de Ramos	Statistics Virginia Polytechnic Institute	Rockefeller	Ph.D.	September 1, 1965
Maximo R. de Vera	Hydraulic Engineering SEATO Graduate School of Engineering	SEATO	M.S.	June 10, 1965
Amador D. Yniguez	Computer System Cornell University	UP-Cornell		September 15, 1966
ENTOMOLOGY:				
Emiliana N. Bernardo	Entomology Kansas State University	Rockefeller	Ph.D.	September 1, 1965
Benjamin L. Cariaso	Animal Parasitology University of California	Rockefeller	Ph.D.	September 2, 1965
Leonila A. Corpuz	Entomology University of Minnesota	Assistantship	Ph.D.	July 1, 1965
Romeo L. Dizon	Entomology Pennsylvania State University	Assistantship	Ph.D.	September 1, 1964
Nelson M. Esguerra	Entomology University of Hawaii	East-West	M.S.	September 1, 1965
Francisco M. Laigo	Entomology Purdue University	Assistantship	Ph.D.	September 1, 1965

(1)	(2)	(3)	(4)	(5)
Belen D. Morallo	Entomology University of Hawaii		Ph.D.	September 1, 1964
D A I C :				
Higino A. Ables	Extension Ontario Agricultural College	Assistantship	M.S.	September 1, 1964
Ely D. Gomez	Communications , Michigan State University	Rockefeller	Ph.D.	September 1, 1965
Nora C. Quebral	Agricultural Communications University of Illinois	Rockefeller	Ph.D.	September 7, 1964
Rodolfo N. Salcedo	Communications Research Michigan State University	Assistantship	Ph.D.	January 1, 1966
Alexis S. Tan	Agricultural Journalism University of Wisconsin	Assistantship	M.S.	September 1, 1965
Maximo W. Baradas	Extension Education University of Wisconsin	UP-Cornell	M.S.	August 24, 1966
Virginia PB Samonte				
HOME TECHNOLOGY:				
Virginia B. Fernandez	Home Economics University of Illinois	UP Partial Fellowship	M.S.	August 23, 1965
Torreta, Delfina M.	Clothing and Textile Utah State University		Ph.D.	September 1, 1966

(1)	(2)	(3)	(4)	(5)
Myrna L. Umale	Child Development University of Connecticut	Fulbright-Hayes	Ph.D.	August 2, 1965
HUMANITIES:				
Edgardo B. de la Cruz	Drama and Theatre University of Hawaii	East-West	M.S.	August 23, 1965
Dominador R. Castillo	Teaching on Modern Language University of California		M.S.	February 1, 1966
Edelwina C. Legaspi	Speech and Linguistics Cornell University	Ford	Ph.D	September 8, 1964
Paz Eulalia Saplala	Humanities University of Minnesota	Assistantship	Ph.D.	February 10, 1965
Elena V. Reyes	English Language University of Wisconsin	Assistantship	Ph.D.	August 1, 1966
Pacita F. Yaptengco	Linguistic Michigan State University	Assistantship	M.S.	September 1, 1965
PLANT PATHOLOGY:				
Gregoria N. Acedo	Plant Pathology University of Massachussetts	Assistantship	Ph.D.	July 1, 1966
Ireneo J. Dogma	Mycology University of Michigan	Fulbright-Hayes	Ph.D.	August 8, 1966
Gil G. Divinagracia	Plant Pathology University of Florida	Assistantship	Ph.D.	August 17, 1965

(1)	(2)	(3)	(4)	(5)
Lina V. Ilag	Plant Pathology Purdue University	Rockefeller	Ph.D.	September 1, 1965
Florendo C. Quebral	Plant Pathology University of Illinois	Rockefeller	Ph.D.	September 7, 1965
Lapis, Delfin B.	Soils University of Minnesota	Assistantship	Ph.D.	September 15, 1966
William L. Fernandez	Microbiology Cornell University	UP-Cornell	Ph.D.	September 1, 1966
SOILS:				
Aurelio A. Briones	Physics of Tropical Soils University of Hawaii	Rockefeller	Ph.D.	September 1, 1965
Angelina M. Briones	University of Hawaii	NSDB	Ph.D.	September 1, 1966
Bonifacio C. Felizardo	Soil Fertility and Chemistry	UP Partial Fellowship	Ph.D.	September 15, 1966
Samonte, Henry P.	University of Missouri	Rockefeller	Ph.D.	September 7, 1966
Igmidio T. Corpuz	Soil Management and Conservation Cornell University	UP-Cornell	Ph.D.	September 1, 1965
Nicanor C. Fernandez	Soils University of Illinois	Rockefeller	Ph.D.	September 1, 1965
Aspiras, Ruben B.	Soil Microbiology-Chemistry University of Wisconsin	Assistantship	Ph.D.	August 15, 1966

(1)	(2)	(3)	(4)	(5)
F H D O :				
Vicente A. Quiton	Agricultural Education University of Illinois	Assistantship	Ph.D.	February 1, 1965
Rafael M. Salva Cruz	Agricultural Economics University of Hawaii	East-West	M.S.	September 1, 1965
Jesus C. Sta Iglesia	Land Tenure and Farm Management	ADC and East-West	Ph.D.	August 17, 1965
Francisco P. Vergara	Dairy Management Texas A and M University	Assistantship	M.S.	January 15, 1965
Prospero R. Cover	Sociology and Anthropology University of Arizona	UP-Cornell	Ph.D	September 1, 1966
STUDENT AFFAIRS OFFICE:				
Dulce S. Miranda	Guidance Cornell University		M.S.	September 1, 1965
Rhodelia Lozada	Psychometrics Purdue University	UP-Cornell	Ph.D.	September 1, 1966

M.S. AND PH.D. LOS BANOS STUDENTS AS OF THE FIRST SEMESTER, 1966-1967

	M.S.	PH.D.
Ag. Botany	23	5
Ag. Chemistry	21	-
Ag. Economics	26	-
Ag. Education	30	1
Ag. Engineering	14	-
DAIC	7	-
Agronomy	42	4
An. Husbandry	21	-
Poul. Husbandry	2	-
Applied Math. (Statistics)	13	-
Entomology	20	1
Pl. Pathology	19	1
Soils	28	2
Comm. Development	6	-
Home Technology	1	-
TOTAL	273	14

CERTIFIED CORRECT:

M.A. GAPUD
College Secretary

UPCA Library

Total vols.:	37,500
	60% - serials
	40% - books

Of 37,500 vols. 60% for graduate education

Forestry Library

Total vols.:	8,000
Serial titles:	400
Of total collection	3,000 - for graduate education

IRRI Library

Monographic materials	16,271
Serial titles	900

TOTAL OPERATING BUDGET
OF THE UPCA PER YEAR

UP SOURCE	4,018,942
UPCO	3,666,000
RESEARCH GRANT	1,091,016
REVOLVING FUND	287,573
SCHOLARSHIP GRANT	226,444
	9,289,975
DTRI	978,178
ACCI	340,000
GRAND TOTAL	10,608,153

UPCA RESEARCH GRANTS

GRANTS	ALLOTMENT 1965-1966
1. Rice and Corn Production Program	P 619,641.00
2. National Science Development Board	
a) Project 2.64	20,000.00
b) Project 2.53	122,500.00
c) Project 2.85	39,000.00
d) Project 2.89	20,000.00
3. Cadang-Cadang Research Foundation	65,878.95
4. U. S. Public Law 480	
a) Ag. Botany (Reeponse of Plants to Various Light Durations)	7,512.00
b) Plant Pathology (Cadang-Cadang)	14,084,00
c) Plant Pathology and Plant Breeding (Downy Mildow)	19,040.00
5. International Atomic Energy Agency	5,230.00
6. Agricultural Development Council	
a) DAIC	12,966.10
b) Ag. Economics	11,679.00
7. National Research Council of the Philippines	
a) Home Technology	22,560.00
b) Ag. Botany (Dr. Capinpin)	8,250.00
c) Ag. Botany (Dr. E. de Gumman)	10,440.00
8. Minera Bayovar S. A. Grant	7,344.84
9. Philippine Association of Flour Millers	1,700.00

	GRANTS	ALLOTMENT 1965-1966
10.	Diamond Alkali Company	P 5,304.34
11.	Rohm and Hass Company	800.00
12.	Eli Lilly and Company	2,328.00
13.	Chemicals and Phosphates Ltd.	3,876.80
14.	Ammonium Chloride	3,477.64
15.	E S S O	5,719.11
16.	Rice Crash Program	61,685.00
	GRAND TOTAL -	P1,091,016.78

1a. Number of fellows and scholars by Department, IRRI. September 15, 1966

Department	Number of Fellows	Number of Scholars	Total
Agric. Economics		2	2
Agric. Engineering		1	1
Agronomy		9	9
Chemistry		1	1
Communication		31	31
Entomology	1	3	4
Plant Pathology	1	1	2
Plant Physiology		3	3
Soil Chemistry		2	2
Soil Microbiology		2	2
Statistics		2	2
Varietal Improvement	1	8	9
TOTAL	3	65	68

1b. Number of scholars and assistants studying for a degree by Department. IRRI. September 15, 1966

Department	Number of		Total
	Scholars	Assistants	
Agric. Economics	2	1	3
Agric. Engineering		2	2
Agronomy	9	3	12
Chemistry	1	3	4
Communication	3	2	5
Entomology	2	4	6
Plant Pathology	3	4	7
Plant Physiology	1	4	5
Soil Chemistry	1	2	3
Soil Microbiology	2	2	4
Statistics	2	1	3
Varietal Improvement	4	2	6
TOTAL	30	30	60

2a. Nationality of follows and scholars at IRRI. September 15, 1966

Nationality	Number of		Total
	Fellows	Scholars	
Ceylon		1	1
Korea		3	3
India	2	4	6
Indonesia		2	2
Nepal		1	1
Nigeria		2	2
Pakistan	1	7	8
Philippines		35 (31 in communications special course)	35
Sudan		1	1
Taiwan		5	5
Thailand		2	2
U.S.A.		1	1
Vietnam		1	1
TOTAL	3	65	68

2b. Nationality of scholars in graduate school at UPCA. IRRI. September 15, 1966.*

Country	Scholars
Ceylon	1
Korea	1
India	1
Indonesia	2
Nigeria	1
Pakistan	3
Philippines	12
Thailand	2
Taiwan	7
Total - - -	30

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*IRRI assistants in the graduate school numbering 30 are all Filipinos.

3. About three (3) of the UPCA graduate faculty acted as co-advisers with the IRRI staff.

4. Number of professional staff of IRRI - 26

5. Number of professional staff involved in the academic (degree) training - - 19

6. Almost all of the course work are given by the pertinent departmental staff at UPCA (sometimes UP Diliman). This number of staff is estimated to be at least 50.

7. a) Administration and budget relationship - entirely independent. However, there exist continuous consultations at departmental and administrative levels of IRRI and UPCA.

   b) Nineteen (19 IRRI staff members are affiliate professors of the UP graduate school. They act as advisers, offer courses in special topics, chemistry, communication and statistics. They also conduct seminars.

   c) A total of 16 IRRI staff is involved in advising 60 graduate students of which 30 are scholars and the rest assistants. There are 38 trainees who are involved in the on the job training.

ADDITIONAL FACTS AND FIGURES AND/OR INFORMATION MAY BE FOUND IN THE BOUND PAPERS WHICH ARE SUBMITTED HEREWITH

SEAMES/TF/4.1

or P/11/1

Report of the Task Force on the Permanent SEAMES Office

By Dr. Thamrong Buasri and Dr. Edwin Young

At the request of the SEAMES Dr. Thamrong Buasri, member of the Secretariat, and Dr. Edwin Young, President of the University of Maine, made brief visits to the ministries of education of Malaysia, Singapore and the Philippines during the period September 28 to October 3. They had plans to visit Saigon, but due to inability to get confirmation of their travel were not able to stop there.

The purpose of the visits was to hold informal discussions about the future of the SEAMES secretariat in anticipation of the October 17 SEAMES meeting to be held at Bangkok. At every stop on their quick tour they were given every assistance of the respective ministries both with respect to their travel arrangements and the discussions they wished to have.

At Kuala Lumpur they met with among others Y.M. Raja Zainal Abidin, Acting Permanent Secretary and Mr. S.V.J. Ponniah.

At Singapore the discussions were primarily with Mr. Kwan Sai Kheong, Acting Permanent Secretary and Director of Education.

At Manila due to the inability of Secretary Romulo to get to Manila because of flying problems they met a group headed by Dr. Onofre D. Corpuz, Acting Secretary, and including the Phillipines delegates to the recent SEAMES Technical Workshop held in Kuala Lumpur.

At each meeting there were informal discussions of a wide range of issues relating to the future of SEAMES including the following:-

1. Should SEAMES be made permanent?
2. If permanent, should it be permanently established in one place or should it in the manner of ASA rotate from country to country?
3. How large should the secretariat be?
4. What would be the function of the SEAMES secretariat?
5. How would the secretariat relate to other regional projects sponsored by the ministers?
6. How would the secretariat be financed?
7. If the secretariat were to have a permanent staff, what scale of compensation should be used?

Although it was agreed that the answers to these and other questions relating to the future of the secretariat would have to wait upon the meeting of October 17 and finally upon the decisions of the ministers at their November meeting, some tentative directions emerge from the discussions. Briefly they are that:

(1) There was a unanimous view that there should be a permanent secretariat of the SEAMES.

(2) It probably should be permanently established in one place although there was some sentiment for its rotation from country to country.

(3) If established with a permanent staff it was the general view that at least in the beginning the staff should be of modest size in order to conserve both financial and manpower resources.

(4) It was agreed that the United Nations scale of compensation should be considered in planning the compensation for the professional staff. Supporting staff would be recruited from the host country at going country scales.

(5) A number of functions were envisaged for the secretariat of the SEAMES including:

a) carrying out the assignments of the ministers of education,
b) planning and studying independently or with the assistance of consultants the feasibility of certain regional education project proposals,
c) helding conferences and seminars,
d) promoting the utilization of academic facilities and professional competence within the region through exchange of students, faculty members and professional personnel,
e) promoting, planning and administering small or temporary projects or centers of regional significance,
f) acting as liaison between the Southeast Asian Educational Council and the SEAMES projects,
g) helping to find financial support from interested countries, organizations or other sources for its own operation and for SEAMES projects,
h) and cooperating with other organizations or agencies in matters of common interest.

(6) At every meeting there was considerable discussion of financing both of the secretariat and the autonomous projects with concern that the budget of the secretariat be kept as modest as possible.

In respect to the large projects it was agreed that until the financial picture is made much clearer, little progress can be made. On the basis of the informal discussions outlined above we are taking the liberty of drafting a proposal on the organization of the SEAMES as basis for discussion at the meeting of October 17.

It is proposed

(1) That the Southeast Asian Ministers of Education form a permanent council and establish a permanent secretariat with a director chosen by the Ministers who would be directly responsible to the Ministers' Council.

(2) That the Ministers' Council select an appropriate site for the headquarters of the SEAMES.

(3) That the Ministers jointly or through a subcommittee immediately search for a director of the Secretariat.

The director should be a person of such professional competence that he can vigorously represent the Ministers' Council and direct the activities of the Secretariat in such a way as to command respect and engender widespread professional and financial support.

(4) The director and the professional staff should be recruited at salary and benefit levels generally in line with the U.N. scales.

(5) Among others the duties of the director shall be

(a) to administer the Secretariat in line with policies laid down by Ministers' Council;

(b) to report at the annual meeting and by interim written reports on the activities and progress of the Secretariat's program;

(c) to present at the annual meeting a program and budget of the Secretariat for the ensuing year;

(d) to nominate to the Ministers' Council two or three persons to be professional members of the staff;

(e) to arrange for locally recruited supporting staff, quarters, equipment, supplies, etc.

(f) to arrange approved conferences, seminars, consultationships, followships and exchanges of students and faculty;

(g) to suggest regional educational projects to be supported and administered by SEAMES to the Ministers' Council and, if they are approved, study their feasibility, plan their financing and supervise their implementation;

(h) to act as a liaison between the Ministers' Council and the larger projects in which the ministers have an interest because of their regional characteristics;

(i) with the approval of the Ministers' Council to seek support and assistance for the SEAMES, its projects and for the other regional projects from foundations and donor governments;

(j) in other appropriate ways to encourage regional cooperation for the betterment of education at all levels;

(6) The budget of the Secretariat for the first year shall include:

Category I

Staff	60,000
Staff Travel	8,000
Rent	5,000
Supplies and equipment	8,000
Contingencies and Local Transport	15,000
	$96,000

Category II

Conferences, seminars, meetings, feasibility studies, design and development studies for such projects as the Educational Radio & Television Project, the Regional Institute of Science and Mathematics, etc.	$250,000

Category II is a budget item that will vary greatly from year to year depending on the number of feasibility studies, forces, etc. Clearly there are a number of large projects that need to be studied in the near future.

(7) Financing

In order to get the SEAMES off to a quick and efficient start, it is recommended that in the first year the major share of the support of the Secretariat and all of support of Category II of the budget be sought from outside sources.

In the first year the director working under the direction of the Ministers should evolve a permanent financing program that will involve member countries, donor governments and foundations and perhaps at the end of five or ten years depend permanently on the region for the Secretariat support.

The director should also explore the possibility of an endowment fund for items that are in category II. The success of the SEAMES will rest in large point on its ability to quickly arrange conferences, studies, etc. without negotiating for relatively small sums.

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Supplementary Report of the Task Force on the Permanent SEAMES Office

By Dr. Thamrong Buasri and Dr. Earle Hoshall

Since Dr. Thamrong and Dr. Young were unable to visit the Ministry of Education in Saigon prior to Dr. Young's return to the United States, it was arranged for Dr. Thamrong accompanied by Dr. Hoshall to make this visit.

The purpose of the visit was similar to that of the Dr. Thamrong - Dr. Young visits, namely, to hold informal discussions about the future of the SEAMES Secretariat in anticipation of the October 17 meeting in Bangkok.

Dr. Thamrong and Dr. Hoshall were shown every courtesy by the Ministry of Education of Vietnam and are deeply appreciative of their warm hospitality.

Meetings were held with:

Mr. NGUYEN-VAN-TRUONG : Secretary of State for Education.

Mr. DUONG-THIEU-TONG : Technical Assistant to the Secretary Head of Delegation to Bangkok.

Mr. PHAM-VAN-THUAT : Director of Cultural Affairs (Head of Delegation to KL in July).

Mr. LY-CHANH-DUC : Director, Instructional Materials Center.

Dr. NGUYEN-HUU, M.D. : Professor, Faculty of Medicine, Saigon.

Dr. DANG-QUANG-DIEN : Director, Directorate of Agriculture, Forestry and Animal Husbandry.

Dr. NGUYEN-CHUNG-TU : Dean, Faculty of Sciences University of Saigon.

Mr. NGUYEN-VAN-LUONG : Director, Directorate of Pedagogy and In-Service Training.

His Excellency the Secretary of State for Education expressed himself as agreeing with the expressed opinions of the Ministers of Education of the other countries that a permanent secretariat, of relative minimum size in the beginning, should be established in a selected permanent location.

He then presented a strong case for the locating of the Permanent SEAMES in Saigon, saying:

1. Vietnam is the geographical center of Southeast Asia.
2. Vietnam is engaged in a special kind of war, most importantly a war that in reality is in the interests of the whole of Southeast Asia, a war of the free world to prevent communist agression and to permit the cultural and social development of Southeast Asia.
3. SEAMES is one example of a cooperative free world effort in the struggle against decease and ignorance and Vietnam is very proud of the part that she can play.
4. The locating of the Permanent SEAMES in Saigon would be a manifestation of the solidarity of the free world and a needed expression of approval and support.

His Excellency, also, mentioned especially the problem of language, in view of the widespread use of French in Laos and Vietnam, and suggested that official SEAMES documents be made available in both English and French, and that interpreters be provided for conferences as needed.

Further, His Excellency expressed the willingness of Vietnam to provide a site for the project in Higher Education, to support the development of the National Center for Tropical Medicine and to make any contribution to the support of other projects within their abilities to do so.

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